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PESTICIDES AND GROUNDWATER

HEARING

BEFORE THE

SUBCOMMITTEE ON
TOXIC SUBSTANCES AND
ENVIRONMENTAL OVERSIGHT

OF THE

COMMITTEE ON
ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE

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CONTENTS

OPENING STATEMENTS

	Page
Baucus, Hon. Max, U.S. Senator from the State of Montana	9
Burdick, Hon. Quentin, U.S. Senator from the State of North Dakota	17
Durenberger, Hon. Dave, U.S. Senator from the State of Minnesota	1
Mitchell, Hon. George J., U.S. Senator from the State of Maine	21
Stafford, Hon. Robert T., U.S. Senator from the State of Vermont	26

WITNESSES

Coffin, Dr. Roberta R., commissioner, Vermont Department of Health	27
Written statement	86
Early, Jack D., president, National Agricultural Chemicals Association, accompanied by Dr. Loy Newby, director, public affairs, Ciba-Geigy, Corp.; and Scott Ferguson, vice president, National Agricultural Chemicals Association	35
Written statement	104
Englund, Gary, chief, section of water supplies, Minnesota Department of Health and member, Association of State Drinking Water Administrators, accompanied by Fred Marrocco, director, Bureau of Water Supplies, Pennsylvania Department of Environmental Resources and legislative committee chairman, Association of State Drinking Water Administrators	49
Writtten statement	130
Kessler, Kevin, chief, groundwater management section, Wisconsin Department of Natural Resources	44
Leahy, Hon. Patrick J., U.S. Senator from the State of Vermont	3
Written statement	55
Additional statement	64
Maslyn, Mark, assistant director, national affairs division, American Farm Bureau	48
Moore, Dr. John A., Assistant Administrator for Pesticides and Toxic Substances, Environmental Protection Agency	6
Letter to Senator Mitchell	25
Written statement	73
Responses to additional questions from Senator Burdick	83
Mott, Lawrie, Natural Resources Defense Counsel on behalf of the Campaign for Pesticide Reform accompanied by Erik Olson, counsel, pollution and toxic substances division, National Wildlife Federation; and Nancy Drabble, executive director, Congress Watch	33
Written statement	89
Letter to Member of Congress	101
Smith, Velma, director, groundwater protection project, Environmental Policy Institute	46
Written statement	109

PESTICIDES AND GROUND WATER

TUESDAY, SEPTEMBER 9, 1986

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
SUBCOMMITTEE ON TOXIC SUBSTANCES AND
ENVIRONMENTAL OVERSIGHT,
Washington, DC.

The subcommittee met, at 10:02 a.m., in room SD-406, Dirksen Senate Office Building, Hon. Dave Durenberger (chairman of the subcommittee) presiding.

Present: Senators Durenberger, Stafford, Abdnor, Baucus, and Mitchell.

OPENING STATEMENT OF HON. DAVE DURENBERGER, U.S. SENATOR FROM THE STATE OF MINNESOTA

Senator DURENBERGER. This hearing will come to order.

Good morning, gentlemen and ladies. The purpose of the hearing this morning is to consider pesticide contamination of the Nation's ground water resources. Recently, the Senate Agriculture Committee reported legislation to amend the Federal Pesticide, Fungicide, and Rodenticide Act, otherwise known as FIFRA. It is the Federal Government's fundamental law regulating the use of pesticides.

We want to begin this morning by sincerely commending the Agriculture Committee for the work that it has done in extending our congratulations to the many persons who have labored for many months to get the FIFRA amendments to this point in the legislative process. The amendments are long overdue. They will assure that EPA has the toxicological data necessary to judge objectively the threat to the environment and to human health posed by a pesticide before it is registered for use in the United States. The amendments reflect intensive negotiations between representatives of the pesticide manufacturers and the environmental community. And to them we say congratulations as our first order of business.

The FIFRA amendments touch on many subjects, some of which are of great interest to the members of the Environment Committee. Some are even squarely within the jurisdiction of this committee. One such item is section 814 of the bill which proposes to establish new authorities of EPA to protect drinking water supplies and ground water resources from contamination by pesticides. This hearing will specifically focus on that legislative language.

As I reviewed the provisions of section 814 over the past few days, I came away with one dominant concern. I do not believe that the Agriculture Committee's amendments do as much as we can—as we must—to prevent ground water contamination.

Back in October 1984, the Office of Technology Assessment issued a major two-volume study on ground water contamination. The report called for a national ground water protection strategy that would have three parts: prevention; detection, and correction.

OTA argued in 1984 that the national strategy must emphasize prevention because a strategy that relies on detection or correction only, would not work. To fully appreciate their conclusion, you must understand a little bit about ground water.

Ground water does not mix like surface water or air, so plumes of contamination which move like slugs through the soil can be highly concentrated.

Because contaminants percolate to ground water slowly, pollution can go on for several years before any hint of the problem would be identified by a detection strategy. Even if the source of the pollution is then capped or closed, damage to the ground water resource may continue and even increase for many years afterward.

Testing ground water supplies for contamination is expensive. The average water sample costs between $200 and $500 to analyze. There are 240,000 public and 14 million private ground water wells in this Nation. That is a cost of $3 to $7 billion just to test each well once. So we can't rely on a strategy that allows the resource to be degraded in the belief that we can detect the contaminants at the points where we use the water.

Ground water is generally delivered to the consumer without treatment. Unlike surface water supplies, where we often filter the water or apply disinfectants, we drink ground water raw—untested and untreated.

Ground water, once contaminated, is very expensive to clean up. Superfund—really a ground water protection program—will cost the nation $8.5 billion over the next 5 years, averaging more than $8 million in cleanup costs at each Superfund site. Preventing contamination at those sites would have been far less costly.

Section 814 of S. 2792 does not focus on prevention. It has a monitoring provision, but only for use after contamination is known to occur. EPA is authorized to impose restrictions on the use of a pesticide, but only when the Administrator determines that it is likely that drinking water wells will be contaminated beyond levels which are safe for human consumption. The bill has a site-specific response authority, but again only after contamination has occurred and then the bill appears to favor a response that simply closes the well, rather than requiring remedial action to restore the resource.

Prevention of ground water pollution by pesticides is possible. Let me use the case of Aldicarb as an example. Aldicarb is a pesticide applied to soil to kill nematodes—small worms that invade plants in the root zone. In the late 1970's and early 1980's, Aldicarb was found to be a ground water pollutant over extensive areas of the United States including Long Island, upstate New York, Wisconsin, Florida, and California. In fact, it has been identified as a problem in 15 different States. Hundreds of water wells have been lost to Aldicarb contamination. Union Carbide, the manufacturer of Aldicarb, has installed carbon filtration systems on over 2,600 private water supplies in order to remove their product, Aldicarb,

from household water. Union Carbide has found it necessary to sample an additional 20,000 wells to determine the extent of the contamination problem.

Only after all of that expensive experience with detection and correction did Union Carbide begin to search for ways to prevent ground water contamination by Aldicarb. Their prevention research was highly successful. By making only Small changes in the timing and rate of application, by using very simple best management practices, they were able to demonstrated that the leaching rate for Aldicarb on many crops could be reduced by as much as 70 percent without losing the efficacy of the pesticide.

The lesson is that no one thought to look for the BMPS that would reduce the leaching rate before the pesticide had contaminated water supplies in 15 of the United States. And even today, EPA is not requiring the use of those practices in the application of Aldicarb. We can find means to prevent contamination by pesticides, if prevention is the focus of our program.

I am sure that the members of this committee share the concerns I have just expressed. I hope that through this hearing and a floor amendment to section 814 we can refocus this legislation to emphasize the prevention of ground water contamination.

Let me now begin with my colleague from Vermont, Patrick Leahy. Pat, come on up. I am very pleased to see you.

STATEMENT OF HON. PATRICK J. LEAHY, U.S. SENATOR FROM THE STATE OF VERMONT

Senator LEAHY. Thank you for accommodating my interest in testifying today.

Senator DURENBERGER. We have plenty of other things that you and I have talked about having nothing to do with this meeting. I appreciated the opportunity to see your draft statement in advance, and your leadership on agricultural issues is well known to the members of this committee. Your concerns on this particular issue are certainly welcome.

Senator LEAHY. Thank you for those kind remarks Mr. Chairman. I think both of us find it somewhat unusual to be in the same committee room, where the doors are open, the lights are on, and people are actually recording things. Most of the time we are behind the vault doors of the Intelligence Committee, where the circumstances are different.

I was very pleased, Mr. Chairman, to hear your statement this morning. I want to return the compliment about your leadership in, and your strong commitment to, environmental protection.

I would also like to state, as I have in past occasions, my great pride in being represented by Senator Robert Stafford, the chairman of the full committee. Speaking as just one of the Vermonters, Democrats and Republicans alike, he represents, we are all very, very proud of the leadership that he has given in this area.

Having both you and Senator Stafford involved is a very favorable omen for people concerned with environmental protection.

Speaking of FIFRA, I remember almost 10 years ago when Senator Lugar and I were working in a subcommittee on the omnibus FIFRA bill. After a year or more of hearings here in Washington,

and all over the country, for that matter, we finally saw the legislation passed. Today, we are considering S. 2792, a bill that contains a great many of the provisions of S. 2215, the bill written by Senator Lugar, Senator Proxmire and myself.

Concerning the bill reported from the Agriculture Committee, I am going to support any amendments from your committee to make the bill more effective in protecting human health and the environment. The Federal Insecticide, Fungicide, Rodenticide Amendments Act of 1986 is one of the most important bills that could be considered by the Senate in this Congress.

We have put an enormous amount of effort into the development of the bill. There are many provisions of the bill that are major improvements to existing authorities. However, certain provisions of the committee's reported bill, if enacted without change, cannot be considered as major improvements to a statute that is designed to protect human health and the environment.

In particular, the Agriculture Committee has adopted two provisions that I believe should be modified or deleted before the Senate adopts the bill. The first such provision is an amendment to section 24 that establishes uniform pesticide tolerance levels.

In essence, the amendment adopted by the Agriculture Committee prohibits a State from establishing a pesticide residue tolerance level more restrictive than the federally established level. I believe this amendment should be deleted from the bill. If a State, exercising its rights, feels it should apply stricter requirements, that is, stronger protections than the Federal Government gives, then that State, whether it is Vermont, Minnesota, or any other State, should have the right to do so.

The committee adopted my suggestion to put a sunset on this authority of 1991. However, I have strong reservations about the need, the precedent, and the administrative problems that are caused by the amendment. I think that the amendment, as it is now drafted, could limit a States' authority to cut down pesticide contamination in the food chain in order to protect the health of its citizens. One Governor has stated that the authority to protect the health and safety of citizens is one of a State's most fundamental powers, I agree. A State legislature should not be told by the Congress of the United States that it cannot protect that State's people if those State legislators think that the Federal Government is not doing an adequate job.

As in other areas of pesticide regulation, Federal tolerances should be the mandatory minimum standards. Marketing convenience simply is not a sound reason to deprive the States of this basic right to protect their citizens. I should also note in this that the States have a very good record in this area. They showed a clear pattern of responsible action. Nothing in the history of this issue would suggest that a State has acted to willfully obstruct commerce.

Mr. Chairman, one of the problems is that the Federal Government sometimes moves very, very slowly in the area of environmental protection. States don't want to move that slowly.

Several groups, largely food manufacturers and distributors, support this prohibition on strict State established pesticide residue tolerances because they envision some chaos in commerce. A patch-

work of State regulations concerning food, they feel would make it difficult for national food companies to do business. I believe their fears are unfounded.

The banning of EDB is one of only two examples any one can point to. Under any circumstances, public health is a more important concern than possible limited temporary disruptions of interstate commerce.

The uniform tolerance provisions adopted by the Agriculture Committee is opposed by 92 chemical companies, 41 environmental, labor, and consumer groups. Deleting this provision, which I will propose during consideration of this bill on the Senate floor, would be wise environmental policy.

Mr. Chairman, in conclusion, years of effort on the part of several organizations concerned about safer use of pesticides have been devoted to formulating a FIFRA bill this year. Many organizations supported S. 2215 the bill that Senators Lugar, Proxmire and I wrote, and as I noted earlier that bill is the source of many provisions of S. 2792. Such organizations include the Campaign for Pesticide Reform, a coalition of 41 environmental and labor groups; and the National Agricultural Chemicals Association, with membership including some 92 companies. I hope that we can pass a bill in the Senate that rewards the efforts of these groups.

Mr. Chairman, you have two excellent witnesses today from Vermont so I will not take more time. Again, I compliment you and compliment Senator Stafford for your leadership in this area.

Senator DURENBERGER. Pat, thank you.

I just want to mention for the record, I am not sure he is going to get here, but I talked at some length to Senator Stafford last night about this hearing. As you accurately indicated to everyone his deep concern, that is one of the reasons we are having this hearing today.

I am glad that you brought up the issue of preemption. I didn't address this up front in my opening statement because principally we are dealing with the ground water issue, but I guess, of all the people in the Senate, I represent more dollar interest in grocery manufacturing than anybody else, and yet I agree with you and your commissioner and a whole lot of other people about the fact that my constituents, already identified, grossly exaggerate the problems to their industry.

We went through the EDB scare, so called, and will probably have more to say about this a little bit later. I just say thank God for the Roberta Coffins and the people in Florida and so forth. Betty Crocker is still in her kitchen and the Pillsbury Doughboy is still dancing on the shelves. It didn't break either company.

Senator LEAHY. They will continue to do a fine business. In fact, Dave, because these food safety protections exist, they can be. Can you imagine the effect on food companies if some of these protections did not exist and if a product scare occurred later on? People would wonder how safe food is. That's when the manufacturers could really be hurt. Today they are protected.

Incidentally, a lengthy part of my prepared statement addresses the ground water issue which I would like to have as part of the record.

Senator DURENBERGER. Your full statement will be made part of the record.

I wanted to make one assumption and that is, from your statement, that we can put you down as a cosponsor of our amendment to delete the uniform tolerance State preemption provision.

Senator LEAHY. Yes.

Senator DURENBERGER. We do have your comments on ground water. One other issue that is of concern to this subcommittee and probably the full committee, because of its work on Superfund, that you may or may not want to comment on is the little part of this FIFRA reauthorization that deals with preempting farmers from any liability for the problems associated with the leaching of pesticides into ground water.

We address that issue at some length and debate, kind of behind the scenes in the conference committee, and I think we are successful in trying to persuade people that even though the authority is in EPA to do something for farmers, they don't use it because of the impracticality of that. The reality also is the manufacturers, as I have already indicated, are more than ready to stand behind the farmers, so it is another issue in which for the good of the farmers in this country they ought to see that particular part of the bill deleted as well.

Do you have an opinion as to that?

Senator LEAHY. I know an attempt has been made to work it out. Again, that is one of the areas where we must act realistically.

Senator DURENBERGER. Do you have any good news for this committee from when you wear the third of your four or five hats on the Appropriations Committee you are the ranking member on the Appropriations Committee with jurisdiction over EPA. We have a realistic shopping list this year. Do you have any good news for us?

Senator LEAHY. We are trying to get that bill together and bring it on the floor, but everybody is waiting to see what happens after the tax bill came back, especially to see how Superfund might be financed.

Senator Garn and I were hoping that maybe within a week we might be in a position to bring that bill forward, but Senator Garn may be in the hospital for a spell.

Senator DURENBERGER. Pat thank you very much. I appreciate your being here today.

Senator LEAHY. Thank you.

Senator DURENBERGER. Now, as predicted the series of outstanding witnesses beginning with Dr. John A. Moore, Assistant Administrator for Pesticides and Toxic Substances of the Environmental Protection Agency.

Jack, we welcome you again and your full statement will be made part of the record. You may proceed to summarize it in your usual efficient fashion.

STATEMENT OF DR. JOHN A. MOORE, ASSISTANT ADMINISTRATOR FOR PESTICIDES AND TOXIC SUBSTANCES, ENVIRONMENTAL PROTECTION AGENCY

Dr. MOORE. I do bring good news. I am not going to read my statement, since it will be submitted for the record. What I would

like to do with my opening comments, Senator, is to try to put into perspective what the Agency is trying to do and thinks needs to be done as it relates to pesticides in ground water.

Senator DURENBERGER. Very good.

Dr. MOORE. I was heartened by your opening comments which dealt with the fact that, indeed, if a pesticide program, as it relates to ground water, is going to work, it must have a heavy focus on prevention as opposed to focusing on practices long after you have a level in a given well that has exceeded a level that would trigger health concerns.

We have a program that, I think, is trying to orient that way, and I would like to highlight in a very thumbnail sketch way several of those points.

One of the basic underpinnings for any type of a preventive program to work has to be knowledge; it has to be data. I think data is needed in three broad areas. One is the physical characteristics of a given chemical or its active ingredients. From that we can make some predictions as to which propensities, possibly, to be leachers.

In addition, we also must have knowledge of soil characteristics and the hydrogeology that might be associated with the area in which that soil is present. And third, we obviously need knowledge on cropping and use patterns, that are either planned or current, as they relate to the use of that material. Knowledge alone isn't going to be enough. We need to have a mechanism in place to allow us to use that knowledge correctly and in a timely fashion.

I think you have to tailor your program. You have to make an example of a pesticide that has the potential to leach under a given set of circumstances. The best way, in my opinion, to tailor that program is to get it closer and closer to the site that is under question which clearly involves a very strong need for a viable State presence to work with EPA.

I have, for example, a graphically illustrated map of a county in Kansas, Senator, which is in color form, to point out the different soil characteristics, and the vulnerability of that soil, that is found in a given county. We see yellow in this case, showing a great degree of vulnerability, and on the other end, the purple area showing essentially little or no vulnerability. This map points out that in one county you have areas ranging from little or no concern from a vulnerability standpoint to, areas of high vulnerability, in this case the Arkansas river.

This suggests to me that in order to put a program in place that is going to be preventive in nature, you have to have knowledge of given site characteristics. We aren't going to be able to do that, I don't think, on a field by field basis from the banks of the Potomac, or if we try to do it I don't think we will do it well.

In addition, I think, one has to have a reference point from which to judge progress or lack thereof. The reference point probably should be health oriented, in most circumstances, and should provide a level of a pesticide above which there is concern that, indeed, a serious health problem has presented itself.

This reference point is referred to in some of the FIFRA legislation as a ground water residue guidance level or a GRGL as we quickly shorten it to. We think the setting of such numbers is important and should be done, and we are well on our way to doing

it. We expect to have some 60 or 70 of these in place through the first half of fiscal year 1987. That is including outside peer review for each and every one of the documents.

Three key areas probably come to mind as to how you would use such a number for a given active ingredient, to afford a level of protection. First, when residues are detected in ground water, the number would suggest that you found the presence of the material sending some type of a message. On the opposite extreme, when you have reached or exceeded, if you will, the hazard level or the advisory level that has been established, this would suggest that immediate action needs to be taken and that, a preventive program has failed; I don't think there is any other word for it.

Then, obviously, some number in between those two would act as a milepost suggesting that once you have reached, say, 20 percent or 25 percent of that number, maybe you need to seriously consider triggering a more aggressive management program to make sure that you don't lose control of the situation.

In trying to implement facets of this sort we again face the problem that is very common to FIFRA, and that is old versus new. I think our initiative is well on the way toward trying to address that problem, but there are unique circumstances associated with each of those cases.

We also are trying to put this together through the development of a broad strategy. One of the priority areas that the Agency has picked for a long-term strategy is agricultural chemicals in ground water. The responsibility for development of that strategy is falling within my office. We anticipate completing our effort in briefing the Administrator within the next few months. We will then have a clear idea as to what that broad strategy is going to be, and can take steps to get on with implementing it.

In addition, I think, something else that is critically needed in this area is some dimension of where are we today. What is the scale and the scope of the problem, based on a national view point? We hope in conjunction with the Office of Water to complete the design and implementation of a pesticide in ground water survey, going to the pilot phase beginning late this year and then getting into the full phase in the next 2 years, so that we then will have meaningful data that will give us a sense of how, where and under what circumstances the problems do exist.

This is not all talk as to what we are going to do. I think there are a variety of things underway that are in my testimony that give examples of things that are being done. As you know, I have testified before that we have initiated chemical characterization through data call ins of over 100 active ingredients. We are analyzing that data right now, and requiring field monitoring data on some of those chemicals that pose bigger problems.

As this relates to new registrations, we have denied some new registrations based on our concern with the potential for the pesticide to get to ground water. In other instances, we have granted only conditional registration and required more accurate field data before we would consider going forward with the full registration. In other instances, we have a number of these chemicals under special review based on ground water concerns. In two instances in

the past, we have proceeded to suspension or cancellation of chemicals based primarily on ground water concerns.

How does this all fit in, in the context of the hearing that you have this morning? This, I think, should be the backbone in trying to figure out what is needed in the way of legislation. Everything that I just described we are doing under current authority. Quite frankly, I would hope that in giving serious consideration to writing language that deals with ground water, one does not become too prescriptive in nature. I don't think our knowledge level is such to allow us to do that, and we may find out 1 or 2 years down the road that we haven't done it quite correctly.

Second, and quite candidly I think, what needs to be done is something that we have done in looking at this language, and that is to make sure that any language that is being developed is doing nothing to erode our current authority or to impede our ability to try to move forward in further implementation of the efforts that we have currently underway.

I think the pesticide program in the Agency started out a little bit behind as it relates to ground water contaminations, but I do think over the last couple of years we have become quite aggressive in this area. I think we have caught up in some facets of it. I think in other areas we have a program outline that will allow us to keep abreast and hopefully get ahead of the issue. It is certainly a major issue, and it is one that we also have to address beyond the constructs of just FIFRA. There are other statutes within the Agency that also I think have to bear on the strategy that I am describing and that we hope to implement early in 1987.

That concludes my comments.

Senator DURENBERGER. Jack, thank you very much.

Let me welcome the ranking member of the subcommittee, Max Baucus. Max, do you have an opening statement?

Senator BAUCUS. Yes, I would like to put it in the record.

Senator DURENBERGER. It will be made part of the record.

[Senator Baucus' opening statement follows:]

OPENING STATEMENT OF HON. MAX BAUCUS, U.S. SENATOR FROM THE STATE OF MONTANA

Mr. Chairman, pesticides and their affect on groundwater is a critical question facing "Rural America."

Our farmers use pesticides to provide food to feed the world in a cost effective manner.

When a family farmer uses a pesticide, he puts his faith and trust in the government that the pesticide is safe for his family, for his community and for those who will utilize the product of his efforts.

The Agricultural Committee is to be commended for the amendments which they have endorsed, reauthorizing the Federal Insecticide, Fungicide, Rodenticide Act (FIFRA). These amendments will strengthen this country's major pesticide law.

While many of the proposed amendments provide greater protection to America's farmers, certain proposed changes actually provide less protection than is afforded today under the existing law.

Pesticide contamination of groundwater is a serious threat to the drinking water of rural America.

When it comes to protecting drinking water, we must "err" on the side of prevention. The amendments before us today, fail to go far enough to insure prevention.

Pesticides are an important tool for American farmers. By the time a pesticide reaches a farmer's hands, he should be reasonably assured that if he properly applies the pesticide, that he will not poison his drinking water.

Rural America is least able to afford tne high cost of water treatment.

When this committee considered reauthorization of the Safe Drinking Water Act, the costs of treating water for rural communities was of paramount concern.

Individuals on private wells are even less able to afford the cost of treatment, once an aquafer is contaminated.

Compounding the problem in many rural areas, is that potable water bearing formulations, are often limited to a single source. There is no replacement water once an aquifer is contaminated.

We have no choice but to prevent contamination

We need safer pesticides which will not pollute drinking water and we need a quick effective response when a problem is suspected.

Recently the pesticide aldicarb or temik was found in groundwater on Long Island. Over 2600 wells, both individual private, and community wells were contaminated. Many of these wells required special filters at a cost of approximately $400 per individual household well, and a periodic need to have the filters replaced.

Since then, this one single pesticide has been identified as a contaminate in groundwater in Florida, Wisconsin and California, Maine, Rhode Island.

This problem was caused by a single pesticide. As we look more, we may find more. Both the area and extent of the problem is much larger than we originally envisioned.

There is a need for an effective program to prevent contamination of groundwater from occurring.

When contamination is found, or suspected, we must be prepared to take effective action, before the problem becomes irreversible.

The action taken must be more than simply telling a community that it must close its wells.

Water is the life-blood of rural America. It must be nutured and protected.

Senator DURENBERGER. Jack, I had intended to open by asking you questions on prevention, but in comparing the first part of your written statement with the comments you made in your oral statement that relates to the objectives of this program, I need to ask you a question.

In the written statement you used the word "unreasonable" in connection with the objectives of this program. In one place you talk about "unreasonable risk" and in the other "unreasonable adverse health effects," whatever that is.

Unreasonable risk is the FIFRA standard and the people on this committee are very sensitive to the difference between unreasonable risk as a standard and no adverse effect, which is the standard in the Safe Drinking Water Act. During the last week or so, at the staff level, we have been trying to make sure that we have a relatively pure health-based approach toward standards setting for pesticides in ground water, if that is what we should do.

In the oral statement, I heard you say something like, maybe I took this out of context, "probably should be health-oriented in most circumstances." The concern here is that if we pass the Agriculture Committee bill, you are authorized to establish ground water residue guidance levels, and that you will be basing those standards on a balancing of the risks and the benefits associated with the pesticides.

I think most people in this committee aren't satisfied with that. When I find you using unreasonable twice in the beginning of the statement and then this "probably should be health-oriented," I feel that you are somehow leading me, I trust, inaccurately to believe that either you are getting your directions from OMB or that you really think that we ought to use the risk/benefit relationship rather than a pure health-based assessment.

Dr. MOORE. Senator, if I could comment, I have had no discussions with OMB in relation to ground water in any sense that you are talking about.

Let me clarify my statement. I think the comment that you raised, as relates to what is in my testimony, probably reflects a careless use of terms without thinking them through. Let me come back also to my comments that I made that "probably should be health-based." Let me clarify that by saying, as I think, at a minimum they should be health-based.

I can conceivably think of some examples maybe in some isolated area, where, indeed, one might set a level that was more stringent than a health-based standard, based on some unique environmental concern. That is what I had in my mind when I was verbally commenting.

As far as the setting of a GRGL, or whatever it is you want to call that number, I think that number should be set strictly on the health risks that are associated with that chemical, without any consideration whatsoever of any benefits to be derived from the use of that chemical.

Senator DURENBERGER. Thank you.

Now let me turn to the questions on prevention. Your testimony indicates that EPA has promulgated criteria to determine which pesticides are likely to be leachers. Could you briefly describe the criteria for us of what is included, how do they work, and at what point in the process are they applied?

Dr. MOORE. Senator, there are a variety of criteria that would be used, but let me check off some of the examples of these characteristics of a chemical that I think are innate to its structure. These include the solubility of the material, its dissociation constant, its octanol water partition coefficient, which gives one an indication of how well it might migrate through soil. Some of the basic chemical parameters, such as Henry's law, hydrolysis half-life, how long is the chemical in water likely to survive as a chemical before being broken down, and also a photolysis half-life, how vulnerable is it to sunlight.

We consider those types of chemical characteristics along with soil or site-specific characteristics. In the site-specific area, you take the ones I just described and also try to factor in, if you will, the characteristics of the soil. A couple of things that come to mind that are of major importance are organic matter content of a soil because higher organic matter often gives you the microbial population that is likely to break down the material before it has a chance to leach.

In addition, another important characteristic pertains to retention of water as opposed to letting it kind of sieve right through, such as would be the case in pure sand, for example. This comes under the heading "recharge time." Recharge meaning how much precipitation and irrigation water leaches to ground water in that particular area. How much of it is evaporated or transpires? How much of it runs off as opposed to going into ground water, characteristics of that sort?

The other characteristic that is, obviously, major in this analysis would be depth to ground water.

Senator DURENBERGER. Let me ask you now, what happens to a pesticide that flunks your criteria, that is the big leachers? How would you react to an amendment to the bill that would require nationwide representative monitoring, paid for by the registrants, for those pesticides that flunk your criteria and for those that have been detected?

Dr. MOORE. I think it would depend upon how the language was written as to whether or not it would be workable. In essence, using new pesticides over the last several years is a changeable example.

We, in essence, have required field monitoring as a mechanism of granting of registration. We have denied registrations, in some instances, saying, come back with more definitive information on that use before we will reconsider it.

In one instance, we have granted, as I said, conditional registration rather than full registration, which means that a pesticide registration is conditionally granted pending receipt and analysis of data that is more specific as to site use and its potential to leach, and we have required additional environmental fate strides related to Aldicarb.

Senator DURENBERGER. The second thing we might do to strengthen the preventive aspects of the bill would be to require the development of best management practices for the leachers. The thought occurred to me that we might want to consider requiring the registrant to do some research on management practices that would reduce the leaching rate and I used an example, a complimentary example, I hope, earlier, of Union Carbide.

What would you think about moving toward BMP's earlier in the process and having the registrant develop them rather than having EPA impose them in some way at registration?

Dr. MOORE. EPA, in a way, indirectly imposes them, I guess, or at least indirectly creates that economic incentive to make registrants want to do something if, indeed, they have a sense that they are not going to get a registration or they will get a seriously curtailed registration of a material based on concern for the amount of chemical that might leach.

I think that to their enlightened self-interest they often will go out and get data to point out that, indeed, they could specify a certain type of application or restricted application in certain times of the year to minimize leaching potential.

Again, as to whether or not EPA wants to be in the role of demanding best management practices, I am afraid that we don't have a lot of expertise. I think these various practices should be considered. I think there are probably other parts of society that are better versed at trying to put those things together than EPA. Certainly it is a vital area.

Senator DURENBERGER. Our colleague Senator Abdnor has been sitting here very patiently wanting to ask questions, but he had to leave.

I will just ask maybe one more and give Max an opportunity to ask questions.

One of the big hurdles we face in trying to prevent contamination from pesticides is the long lag time between the first application and detection, if there is any, and that is because chemicals, at

least some of them, are not very mobile. They sort of build up in the soil year after year.

Is EPA doing anything to develop new or improved methods of monitoring for pesticides in what you call the unsaturated zones, so that we could get some kind of an early warning system?

Dr. MOORE. I would feel much more comfortable giving you an answer to that for the record. I know some of the research is ongoing but how much I would characterize as being focused on the unsaturated zone, I am a little nervous about giving you my opinion.

[The following information was supplied for the record:]

Question. Is any research in progress involving modeling or monitoring of the unsaturated zone to predict pesticide concentrations in the saturated zone?

Answer. Please see the attached "summary of root zone research efforts"[1] describing 25 projects by EPA, USDA and USGS dealing with the unsaturated zone and ground water quality. ARS/USDA's National Groundwater research Directory, also attached, lists nearly 50 research projects by USDA, EPA and USGS concerning agricultural impacts on ground water, many involving analysis of the unsaturated or root zone.

Senator DURENBERGER. Go back to your map of that Kansas county and I will ask you about the leaching problem which are the site-specific contributors, soil pH, permeability, climate, depth, all of the things that you have already mentioned. One of the advantages we have in looking at the relationship of pesticides to ground water is that the applications here are not accidental. They are all intentional applications. The farmer is right there on the spot, trying to control the processes in some way and has information and, in many cases over the last 40 or 50 years in this country, has developed a body of information about site-specific characteristics that if somehow or other that information were matched with needs and to the nature of the pesticides that he or she has available ought to go a long way toward reducing the migration to the ground water. During the recess I was amazed as I traveled around my State and talked to people in the Extension Service, I thought all this pesticide in ground water stuff started with Aldicarb in potato fields in Long Island, but in central Minnesota where they are doing irrigation in sandy soil the farmers and the Soil Conservation people were doing well testing in the late 1970's because logic told them they could have a problem but they stopped it because they ran out of money and nobody wanted to put any money into the zone. Do you have some brief thoughts about how we could incorporate these sort of site-specific factors related to us into a ground water protection strategy?

Dr. MOORE. Senator, you allude to the fact that there is a lot of data available that just needs to be brought to bear on the issue. A lot of it exists within Soil Conservation Service or other parts of USDA or American agriculture out in the private sector as well. There is a tremendous amount of information that has been developed over the years at the U.S. Geological Survey of one sort or another. I think one of the challenges that we have is to try to get that information pulled out and put together in a form that, indeed, you can draw upon. That information coupled with maybe some other physical characteristics data that we demand be known

[1] Retained in committee files.

about pesticides can be made available in a format that is useful at a State level or even at a sub-State level so that, indeed, informed decisions can be made. My sense is that there aren't very many farmers who would knowingly contaminate their ground water. Indeed, the challenge is to get the information there so that they can then make informed decisions that prove to be correct.

Senator DURENBERGER. I found that in the subeastern part of my State, for example, where the carbism is a problem they have all of the site specific information in computers, and the University of Minnesota and the Extension Service are starting to computerize this whole process. So the site-specific information that you have just referred to is all there now, and they are sort of waiting and begging, in effect, for us to come with the other end of this process, and help them out in some way.

I think that we all feel that we are on the verge of doing some good, but we just haven't figured out the best way to do it.

Dr. MOORE. Just one more point. As you know we have a huge mass of data that has come in on the 130 or 140 chemicals that were subjects of data call-ins to the registrants. We have received it, and we are looking at the data. I think the other thing that we have to do with this type of information that deals with physical and chemical characteristics is to get it in a form that is available to the people out in the local areas through some type of easy retrieval, as opposed to having it buried in a file or in a mechanism where you have to hand-sort. We don't do much hand-sorting today.

Senator DURENBERGER. Max.

Senator BAUCUS. Are there any States that do a better job than Uncle Sam?

Dr. MOORE. There are some States that are doing a very creditable job. I can name you some, not to exclude others, but some do come to mind.

Senator BAUCUS. What would some of those States be?

Dr. MOORE. I think a program that Florida has put into place in the last couple of years has a lot of positive aspects to speak about. The program that Wisconsin is putting together is a very good one. I think that some of the things that California is doing are very good. These are three that come to mind from different parts of the country.

Senator BAUCUS. What about Vermont?

Dr. MOORE. I have no opinion. I just don't know.

Senator BAUCUS. I just asked because Senator Leahy, as you know, is opposed to the preemption prohibiting the States from adopting more restrictive provisions. Does the administration have a view on that amendment?

Dr. MOORE. On uniform tolerances?

Senator BAUCUS. No, on Senator Leahy's proposal. I guess that it is the Helms amendment in the Agriculture Committee, which sunsets in 1991, if I recall correctly, prohibiting States from adopting more restrictive provisions.

Senator DURENBERGER. He is asking you if you are in favor of the Durenberger/Baucus, et al.

Dr. MOORE. The agency sees the merits that people raise on both sides of that issue. The agency is willing to follow the mandates of

Congress, and it is looking to Congress to be explicit as to what that mandate should be.

The agency has no view. We try to have a neutral view on that.

Senator BAUCUS. What is it about those States, what do those States do that you like? You mentioned Florida, Wisconsin, and California, for example, what is it that they do that makes sense?

Dr. MOORE. I think, first of all, what they have is a knowledge that, indeed, there is a problem, or could be a problem in their State that needs to be managed. First of all, they have acknowledged that there needs to be a focus of resources on those areas. Then, I think, in most of those instances, they have also drawn on the appropriate parts of the State bureaucracy or the State personnel to handle these things. They expect one small segment, for example, of a State structure to address the problem. That is probably the key to it.

Senator BAUCUS. What States have the best preventive measures?

Dr. MOORE. The States that I mentioned come to mind as being very good in trying to have a preventive program. Florida, for example, by the nature of the geography, has a major problem associated with ground water because of the proximity of that water to the surface.

They have acknowledged, I think, in the last few years that they have to be very aggressive in thinking about how they are going to manage pesticides, and when they are going to use pesticides, as it might relate to contamination of ground water. In that sense, I think they have done a very good job.

Wisconsin, because of some of its soil types, has been very aggressive in trying to stay ahead of the situation. I am sure there are other States as well.

Senator BAUCUS. Wisconsin because of its soil type, did you say?

Dr. MOORE. Some of its soil types are very vulnerable to leaching of pesticides through that soil type into ground water. As a result, they have been very aggressive in the last few years in trying to manage pesticide use before it becomes a problem.

Senator BAUCUS. At what point of contamination in some of these States begin to take action, do you know?

Dr. MOORE. I would have to give you some of the specifics for the record. I don't carry them in my head.

[The following was supplied for the record:]

Question. At what point do the States take action regarding ground water contaminants?

Answer. Most States rely on health guidance levels set by the Federal Government in determining when to initiate response or control action for pesticides in ground water. Several States, however, have developed more sophisticated ground water protection programs involving prevention measures and establishment of their own health guidance numbers. Examples follow:

Massachusetts hes set Drinking Water Guidelines for 8 pesticides including EDB. For the other 7 pesticides, if levels are exceeded, the State suggests that a new drinking water source be used. A graduated prevention system is established for EDB. When residues in drinking water are detected at levels between 0.04 and 0.10 ppb, the water supply is monitored for up to two years. When the level exceeds 0.1 ppb, the supply is closed.

Wisconsin has established or proposed preventive action limits (PAL's) and Enforcement Standards (ES's) for 6 pesticides and 7 other chemicals in drinking water. If a PAL is exceeded at a site, the State of Wisconsin must investigate the situation to determine the cause of the contamination, and take site-specific action to prevent

the level of contamination from increasing to the ES level. This preventive action may include site-specific clean-up such as removal of tainted soil and ground water pumping, aeration and filtering.

If the ES is exceeded at a particular site, the State must ban the activity or practice that contributed or may contribute to exceeding the ES.

If a site is contaminated at levels below the PAL, the State still must investigate the cause.

Two types of ES's are established, for carcinogens and non-carcinogens. For carcinogens, the ES is recommended as the concentration of the contaminant that corresponds to a 1-in-a-million risk level. For non-carcinogens, the ES is calculated based on the no observed effect level (NOEL). PAL's are calculated as a percentage of the ES. PAL's for substances that are carcinogenic, mutagenic or teratogenic are set at 10 percent of the ES. PAL's for non-carcinogens are set at 20 percent of the ES.

Senator BAUCUS. Do you know why they wait until the drinking standard is exceeded?

Dr. MOORE. In the early stages, I think they may have found themselves with a problem they didn't realize they had, and then were playing catch-up, if you will. On the other hand, with some of the chemicals that are being used, they have been fairly aggressive, again very recently, in restricting the use of certain materials, or restricting their use at certain times of the year, or trying to suggest changes in cropping patterns, which might minimize the use of a pesticide application during a particularly vulnerable period of the year.

Senator BAUCUS. Are some of these States enacting provisions and following up on practices which help your agency in trying to separate the wheat from the chaff?

Dr. MOORE. I think so.

Senator BAUCUS. Do you know which ones seem to work and which ones not?

Dr. MOORE. I think so. I think the agency would be better off in many instances clearly having the burden of setting this guidance level, of making sure that data that is relevant to making informed decisions is available, and maybe of giving its opinion on these factors, along with the data, to the State that has a particular soil characteristic type or cropping pattern type. We could look and say, we think that you could have a problem in this part of your State.

I would be willing, if we could work out the right mechanism, to consider ceding to the States the responsibility for the decisionmaking as to how they want to approach the use of a leaching pesticide, or a potential leacher, within their State. Again, if they have the right capability, I think they have a better chance of doing this correctly, rather than us sitting here, saying that we are going to ban the use of a pesticide in a State.

Senator BAUCUS. What I am trying to address is the degree to which your agency also learns from some of the actions the States take. They probably make mistakes, but they will probably figure out something that makes some sense, too, and that helps your agency significantly.

Dr. MOORE. I think that we have a lot to learn from some of the actions that some of the States have taken.

Senator BAUCUS. I am just trying to help make the case that a State should be able to adopt more restrictive provisions if, in their judgment, they think they are necessary. I think that it helps not

only the States, but it helps the Federal Government as well because the Government can benefit by what works and what does not work in the various States.

Thank you very much.

Senator DURENBERGER. Quentin Burdick, do you have an opening statement or some questions? If you have a statement, we can make it part of the record.

Senator BURDICK. I have a statement that I will place in the record and I have one question to ask.

Senator DURENBERGER. We will make your opening statement a part of the record.

[Senator Burdick's statement follows:]

OPENING STATEMENT OF HON. QUENTIN BURDICK, U.S. SENATOR FROM THE STATE OF NORTH DAKOTA

The 99th Congress is faced with a historic opportunity, to make important, lasting, amendments to the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). We owe this opportunity to a unique coalition which has brought the major parties concerned with this issue to the negotiating table. This coalition consists of the National Agricultural Chemicals Association representing over 90 major pesticide producers, the Campaign for Pesticide Reform representing 40 environmental, consumer and labor groups, and the Farm Bureau a national agricultural organization.

This coalition is to be commended for working through some of the thorniest issues which have impeded past effort to reauthorize FIFRA.

Of the issues, protection of groundwater is also under the jurisdiction of the Environment Committee. It is our duty to review and comment on the proposal which the coalition has crafted. However, the coalition agreement is fragile, and members should understand that major changes could jeopardize the passage of this bill before Congress adjourns.

Farmers will greatly benefit by reauthorizing the pesticide law because they are exposed to pesticides more consistently and in greater quantities overall, than any other group. Increased pesticide safety is crucial. By insuring that the registration of a pesticide rests sound scientific safety data, credibly obtained, and that the inert ingredients mixed in the formulation are also safe, the FIFRA amendments assure the protection of the farmer as well as the crop. In addition, by facilitating the registration process, the amendments insure that a steady stream of new, safer and more efficacious products will reach the market as, new crops are developed, and pests gain resistance to old pesticidal compounds.

The manufacturers will get distinct benefits from this legislation, through a streamlining of the reregistration process. One of the key aspects of this is the bill's provision for the registration of an active ingredient once, rather than every time it appears in a new formulation by a different manufacturer. This in combination with parallel patent term reform legislation are a boon to the agricultural chemical industry.

The groundwater provisions embodied in FIFRA take some important steps in protecting the nations groundwater from contamination. The EPA is required to respond as soon as a pesticide is detected in groundwater, and gather information to assess the possibility of further contamination occurring. In the event of recurring contamination EPA is required to set a Groundwater Residue Guidance Level which may not be exceeded and preventive measures must be taken long before this level is reached. For the first time, the registration process will include a determination of a pesticides potential to leach into groundwater. This provides the EPA with the opportunity to include preventive measures in the label before the pesticide goes on the market. The provisions also specify a timeline for action insuring that EPA will respond promptly to situation of serious contamination. These provisions are indicative of a growing consensus on the need for early response, and preventive measures to insure the protection of groundwater.

In addition to the explicit groundwater provisions, the Agriculture Committee took a blanket approach of excluding agricultural producers from liability under any Federal statute. Clearly, the issue of who decides who is responsible for environmental damage rests with the Environment Committee and not with the Agriculture Committee, because it affects previous Environment Committee action under the Safe Drinking Water Act, the Clean Water Act, and Superfund. The Environ-

ment Committee should express its position on this issue. I would add that the conclusion reached by the Agriculture Committee, of incorportating a liability standard similar to that of Superfund, is meritorious. Conscientious farmers, many of whom are in difficult financial situations, should not be liable for damages when they have acted carefully and in accordance with the pesticide's label.

Senator BURDICK. Doctor, is there anything in this reauthorization of FIFRA that you would interpret as restricting the authority EPA currently has?

Dr. MOORE. I don't know of anything that is in the bill that I would say is a flat restriction that is jumping out at you. Our lawyers have identified certain areas, the way the wording is going now, that might make it more enticing to subject agency actions to legal challenge of one sort or another, but then it becomes problematic as to who would win. But as far as a flat restriction that would impede our current authority, I am not sure that we see much in here that does that.

Senator BURDICK. In other words, your answer is probably no.

Dr. MOORE. No.

Senator BURDICK. Thank you.

Senator BAUCUS. May I follow up on that?

Senator DURENBERGER. Certainly.

Senator BAUCUS. If there is a provision that problematically or arguably makes it more restrictive, what would it be?

Dr. MOORE. Just to give you an example, in the current statute, there is a section 16, which deals with how you can seek to challenge the agency through the courts, for whatever purposes. Some of the sections of FIFRA have been rewritten, to insert language overtly stating that, indeed, the section is subject to section 16 of FIFRA. This is kind of like waving a flag, if you want to try it, here it is, type of thing. Whether or not one would sustain in a circumstance like that, I think is the question.

Senator BAUCUS. What else?

Dr. MOORE. That is just one that springs to mind.

Senator BAUCUS. Thank you.

Senator DURENBERGER. What about section 821 under the heading of liability, S. 2792 contains the following language:

> An agricultural producer shall not be liable in any action brought after the effective date of this Act under any Federal statute for damages caused by pesticide use, unless the producer has acted negligently, wrecklessly, or intentionally.

That, according to the staff of the Agriculture Committee, Federal statutes are interpreted to mean all major environmental statutes. Depending on your definition of the term "damages," it strikes me that that is a rather substantial restriction in your authority, our authority, somebody's authority. Would you not agree?

Dr. MOORE. In that specific instance, I would qualify that, it would impede our ability to work FIFRA. It might impede the agency's ability to work some other standards.

Senator DURENBERGER. Jack, let me ask you a question about GRGLS—Is it all right if we call them GRGLS, G-R-G-L-S?—for the pesticides that are known or suspected to be carcinogens, under the drinking water law, as the Congress wrote it, EPA establishes a recommended maximum contaminant level for each chemical, for carcinogens, that goal is zero.

The EPA set an enforceable standard, called the MCL, as close to that goal as possible using best available technology. For synthetic chemicals, that is generally granular activated carbon, we are pretty confident, I guess, that even the MCL's will be pretty good numbers using that standard setting process. But I don't feel as nearly comfortable with the health advisories.

They are not a formal part of the drinking water law. They don't set one number, they establish a range of numbers. There is a 1-day standard, there is a 2-week standard, and there is a so-called long-term standard. The cancer causing properties of the chemical have only recently been included as a consideration in setting the health advisory.

Perhaps it would be best if at this point, you would describe the health advisories that are being drafted right now for pesticides, and told us what factors you are taking into account.

Dr. MOORE. Basically, what I would see is two sets of health numbers which I think might have some similarities in some respects. MCL's are hazard advisories that have been set for the water program. One, in essence, is going to have to have a statement which identifies the data that was available in considering this, if only to point out where data might have been missing. For example, to say, we do have data that is relevant to predicting birth defects, as opposed to being silent. Being silent, you would not know whether the data was there or was not there.

I think that we would have a statement as to what data is available and was considered, and then we would go on and cite, with these various types of end-points, what data was relevant to the studying of this number, what study seemed to be the one that we selected to come up with a quantitative estimate of a number, as well as the qualitative expression of cancer or birth defects, or whatever the end-point may be.

Then I think what we would do is also spell out what we would estimate a level may be that may pose some type of a quantifiable risk, given all of the uncertainties that are associated with a quantifiable estimate of cancer using even the best of data today.

What I am trying to say is, I realize that the HAL's as they exist now talk about 1-day, 10-day, or give a variety of numbers under a variety of circumstances. I can see where that could be frustrating under some circumstances, but in other circumstances, I can see where it may be of some value. If you have got a sense that a number is very high, what are the short-term concerns, as opposed to the long-term concerns.

This is what I think would be in the back of my mind, and I have certainly not discussed this with my colleagues in the agency. Using cancer as an end-point, we probably would try to define a number that would presume that your source of drinking water was over our standard assumptions, that is, assuming a 70-year lifespan, and *x* amount of water is typically consumed by an average individual each day. On the basis of drinking that amount of water, containing this chemical of concern, through a 70-year lifespan, or something like that, what level in that water would start to approach or exceed a risk greater than one in a million. Not that there is anything magic in one in a million, but again you have to have some frame of reference in deciding what to do.

In noncancer areas, we typically would give a number that would more describe margins of safety, which is the traditional way of doing things. Once you get above this number, the margin of safety maybe is dropping below 100. If it is for birth defect data, and you have good data, this number is typically where we would say, hey, the signal is turning from yellow to amber, or maybe to shades of red.

Senator DURENBERGER. Maybe there is no easy way to answer this question. I am not a doctor, and I love to say that because everybody says, "I am not a lawyer." The problem here is how we set goals, and what we accept as our goal. In drinking water, I accept the goal of zero on carcinogens.

My problem is that I hear conversation about one in ten thousand, one in a hundred thousand, or one in a million, but there is always a one there, and I don't want there to be the one. I can't quite reconcile this in my mind because I am not sure who is choosing the level of risk that is appropriate in a particular case, who is deciding how we justify the choice of one of these numbers over another. Who is making all of these decisions, that is my problem. Can you make me feel any better about it? Can we get closer to the drinking water standard in this area?

Dr. MOORE. Senator, going beyond pesticides to chemicals in general, I think we have long passed the stage, whether we wanted to or not, whereby we could say that no detect, no level of a chemical that may be posing some type of carcinogenic risk, is a viable option. There are too many chemicals out there, combined with our exquisite ability, in the last 10 years particularly, to detect chemicals in smaller and smaller and more vanishing levels, to be able to achieve the goal of a flat zero.

We have chemists who can come up with a one part per ten to the minus 20, and I have no way of relating to that number. One part per billion, for example, is approaching one person in China. Ten to the minus 20, that is one in the world, I can't relate to that now.

Senator DURENBERGER. But neither can anybody else out there, and they are sort of looking to us to help them address where the real world is. We have in front of us a piece of legislation that, as I read it for the first time, will sanction the presence of carcinogens in drinking water. Because we can't seem to find a way to say zero, we are going to be asked to vote on a piece of legislation that says that we can't do anything about, therefore, it is a problem.

This leads me to ask you a couple of product specific questions, one about Aldicarb. Would you agree that ground water contamination by Aldicarb is a serious problem and, has been a problem for some time?

I think you were here and heard the description I gave of this country's experience with Aldicarb, and maybe you can add to it. It sounds to me like it is a serious problem, and yet I don't know that EPA has sought to restrict the use of Aldicarb in any way.

Dr. MOORE. Senator, Aldicarb clearly has been a problem. It has been a serious problem in some areas. Long Island would be an example, Florida another, as well as other areas. In addition to that, I would say that Aldicarb is an example of a chemical, given how it is used, and given its propensity to be a leacher, which certainly

has the potential to be a problem, or be a serious problem if it is not used correctly, or not used with a fair amount of thought given to it.

As to what the agency is doing about it, Aldicarb is in the special review process and indeed we anticipate, by the end of this year, coming out with what is called in our jargon, a PD-2/3. This will announce the proposed regulatory decision as to what should be done, and how it should be done, relating to continued Aldicarb use.

Aldicarb is different from the other chemical subjects we have been talking about. From a health risk standpoint, carcinogenicity is not a concern. It is acute toxicity that is associated with Aldicarb.

Senator DURENBERGER. Let me ask you about another one, in Minnesota, we call it Lasso, and you call it alachlor. What can you tell us about alachlor as a pesticide? I know that it is a big part of Monsanto's business, and it is also a big part of weed control in my State for corn and soybean. But now, I think we are going to get testimony here this morning that it is in 40 percent of the wells in rural Minnesota.

Has the EPA Drinking Water Office asked the Pesticide Office to take action against alachlor? Have they asked for a suspension, or are you considering on alachlor? What can you tell us about alachlor?

Dr. MOORE. We put alachlor into special review about a year-and-a-half ago. The primary reason that we expressed was the possible risk to people who are involved in the application of the material, as opposed to dietary concerns.

The nature or the degree of concern we might have relating to contamination of ground water was somewhat unknown at the time, but we said that as part of our review process, we would get information germane to that subject. I expect that by the end of this month, we will have announced through PD–2/3 what our proposed actions are on alachlor as it relates to both mixer and applicator type of concerns, and ground water concerns.

The numbers that you cite as far as the level and incidence of alachlor contamination of water supplies and wells certainly is a much higher statistic than I have seen, but that is not to say that it is wrong. You are talking about a particular area.

Senator DURENBERGER. George, welcome. Do you have an opening statement that you would like to have made part of the record, or do you want to deliver it?

Senator MITCHELL. Yes, Mr. Chairman, I do have a lengthy opening statement that I would like to have be made a part of the record.

Senator DURENBERGER. Without objection, it will be.

[Senator Mitchell's opening statement follows:]

OPENING STATEMENT OF HON. GEORGE J. MITCHELL, U.S. SENATOR FROM THE STATE OF MAINE

Mr. Chairman; I would like to join you in welcoming our witnesses to today's hearing.

We have a very important piece of legislation before us. The ground water provisions of the bill to reauthorize the Federal pesticide law, as reported by the Agricul-

ture Committee, would be a major new building block in the legislative framework protecting the ground water resources.

I believe it is very important that this Committee give these ground water provisions careful consideration and review. I very much appreciate your efforts, Mr. Chairman, to provide for this hearing and to bring together the excellent witnesses on our agenda.

I think most of the members of this Committee agree that we have made substantial progress in the past several years in development and enactment of legislation containing programs which have, among their objectives, protection of ground water. For example, the RCRA and Superfund programs protect ground water from specific sites or sources of pollution. And, we have included in the Safe Drinking Water Act a new program to protect drinking water wellhead areas from a range of pollution sources.

While we have made substantial progress in construction of a legislative framework capable of protecting ground water, we still have a long way to go.

One of the major gaps in our framework of protection of ground water is the lack of a program to control the migration of pesticides to ground water. Dangerous levels of pesticides have been found in drinking water wells in many States. High levels of pesticides are often found in rural, agricultural areas where wells are privately owned and not covered by the protection programs of the Safe Drinking Water Act.

I would like to commend the Agriculture committee for recognizing the problem and for its work in developing the proposal before us today.

I think we all agree that a vigorous program to protect ground water from pesticide contamination is needed. While the FIFRA ground water provision has some commendable points, I have concerns about several specific provisions.

For example, I am concerned about the degree of public health protection to be provided by the proposed "ground water residue levels". And, I am concerned about how site specific response actions will work and the lack of funding for such actions. I look forward to hearing the views of our witnesses on these and other issues.

Our efforts to assure protection of ground water by developing programs to address specific, individual pollution sources, such as pesticides, are necessary and important. I do not believe, however, that we can be confident that we have addressed the problem of ground water pollution fully and effectively until we have enacted comprehensive legislation to safeguard this resource.

Late last year, Senator Baucus and I, along with other members of this Committee, introduced legislation intended to provide a comprehensive program for ground water protection. I know, Mr. Chairman, that you are interested in developing a more comprehensive approach to this problem and I look forward to working with you in this area.

Finally, Mr. Chairman, I would like to state my opposition to two sections of the proposed FIFRA bill which are not part of the ground water provisions. The first of these sections would preempt State authority to set tolerances for pesticide residues on food products which are more stringent than those established by the EPA. The second would waive liability under other Federal environmental statutes for agricultural producers.

States now have the authority to set tolerances which are more stringent than EPA's. Several States, including my home State of Maine, have used authority in a limited number of cases where EPA did not act appropriately or was slow to act. Our other environmental statutes clearly allow States to be more stringent than the Federal government in protecting the environment and public health. I believe it would be a serious mistake to reserve this basic policy by preempting State rights to set food tolerances.

The second provision of concern relieves agricultural producers of liability under other Federal statutes. Since these statutes are within the sole jurisdiction of the Environment and Public Works Committee, in my view this provision should either be dropped by the Agriculture Committee or should be referred to this Committee for consideration.

As to the merits, the policy embodies in this provision contravenes very carefully developed liability provisions for agricultural producers. Appropriately redesigning such liability in all our Federal environmental statutes would be time-consuming and difficult. The current situation does not warrant such a review at this time.

Mr. Chairman, I know you share my opposition to these provisisons and I took forward to working with you and others to delete them from the FIFRA bill.

Thank you, Mr. Chairman.

Senator MITCHELL. Thank you, Mr. Chairman.

Dr. Moore, I apologize for not having been present during the earlier part of your testimony. I was at another hearing. I do have some questions to ask.

First, section D, the ground water provision of the FIFRA bill authorizes EPA to set ground water residue guidance levels. Those guidance levels are important because under the bill they would, of course, prompt other action. As I understand it, these guidance levels are to be set equal to a maximum contaminant level established under the Safe Drinking Water Act, when such a level is available.

Am I correct in understanding that a maximum contaminant level is not strictly a health goal, but rather you said that it is closer to the goal of no adverse risk as cost considerations will allow.

Dr. MOORE. I think, Senator, you are basically correct.

Senator MITCHELL. If there is no maximum contaminant level, the EPA may use health advisories established by the EPA Drinking Water Office. What is the basis for setting health advisories? Are they, in fact, strictly health based, or are costs considered?

Dr. MOORE. Setting health advisories, to my knowledge, it is strictly health based. The reason for the Office of Drinking Water, in the past, to have gone into the setting of advisories is to provide information to individuals or to localities when, in sampling a water supply, they detect chemicals, and the immediate question is, what does that mean, what is the risk?

In those instances, in a rather expedited fashion, they have tried to give the interested party the wisdom of the agency as to what risk, if any, may be associated, or is known to be associated with that chemical, and at what level.

The health advisories are strictly that. Health advisories do not have the regulatory connotation that a maximum contaminant level has. I believe that the language that is in the bill is basically saying, if you have a maximum contaminant level that has been previously set for a given chemical, you should use that, or you should consider using that. If one has not been set, don't hesitate to consider using other things that the agency may have done in the past, such as health advisory levels.

I think what we are in the process of doing might now is setting up something that would be akin to these numbers for some 60-odd pesticides. The drive to do that is that we have a pesticide survey of municipal and private wells that we plan to implement. We have been adamantly saying that before we do that first analysis, we will have, for each one of these 60 chemicals that we are going to analyze, a fact-sheet available. Should residues be found, that the person who has been drinking that water will have some point of reference for guidance as to whether or not there is a risk, and what the degree of that risk may be.

The agency did not want the words "health advisory levels" used in FIFRA because then you are embodying them in statute, and they no longer become advisory. This is where the need for an alternate term arose, and the term that has been coined is the ground water residue guidance level. This is just different terminology, and the level is to be strictly health driven.

Senator MITCHELL. It is?

Dr. MOORE. Yes.

Senator MITCHELL. If I may go the next step. If there is no maximum contaminant level and no health advisory exists, then you can just set the level. You ought to find a level at which, and I quote, "no known adverse effects on the health of persons occur." I have two questions on that.

In finding such a level, do you plan to consider cost of compliance or other economic considerations. If you do not plan to consider such costs, might you be in a position of setting a more protective level for a pesticide without a maximum contaminant level, and for a pesticide with a maximum contaminant level?

Dr. MOORE. Senator, it is conceivable that we could set a number that would be more restrictive than an MCL, assuming that we set a number, and then the MCL followed behind it a year later, or something like that, because the MCL's do have to level themselves with practicality of municipal water treatment, which is what they are geared for. One could argue that you didn't necessarily have to tolerate that in a private water supply, and that has been one of the arguments against wedding the ground water residue guidance level to an MCL, because it is conceivable that it could be lower than an MCL.

Senator MITCHELL. You answered the second question, and the substance of your answer indicates that your response to the first question is that you do plan to consider the cost of compliance or other economic considerations in finding such a level in the circumstances described, that is, no maximum contaminant level and no health advisory.

Dr. MOORE. No. We are required, in the setting of an MCL, to take some of those things into consideration. In the establishment of a GRGL, or ground water residue guidance level, we would not take those types of things into consideration. It would be strictly based on the health data dealing with risk.

Senator MITCHELL. I would like to digress for just a moment on the subject of the ground water residue guidance levels. I am concerned that they may be applied to Superfund sites under the new cleanup standards in the Superfund legislation that is before us. It is not my belief, as one who has participated in the Superfund conference, specifically in the standards section, that these ground water guidance levels were intended to be used as standards at Superfund sites. I don't believe that it is the intention.

I would like to ask for your opinion. Is it your opinion that the ground water guidance levels could be a standard of cleanup under the new Superfund cleanup provisions?

Dr. MOORE. I am sure that somebody over in the Superfund part of the EPA empire might give consideration to it. I would probably share your concern, or at least what I discern as your concern, that it may be an inappropriate use of the GRGL.

Senator MITCHELL. It is fair for me to conclude that you agree with me that ground water guidance levels should not be applicable to Superfund cleanups?

Dr. MOORE. I don't think that they should be used or not used. I think one might be able to find a circumstance where that number for a given material may be the appropriate number.

Senator MITCHELL. I guess I am not clear what your response is.

Dr. MOORE. My last response, from your perspective, might be wanting it both ways.

Senator MITCHELL. Let me state it again, I may be perhaps a little clearer than I have been so far. It is my opinion that ground water guidance levels should not be used as a standard of cleanup under the new Superfund cleanup standards. Do you agree or disagree?

Dr. MOORE. As far as agree or disagree, I would best defer on that because I am not as versed on where CERCLA appears to be perhaps as I should.

Senator MITCHELL. Would you, on behalf of the agency, respond to me in writing on that subject, or to the committee at your earliest convenience?

Dr. MOORE. Yes.

[The following was supplied for the record:]

Will GRGL's also be used by EPA under CERCLA as standards for cleaning up Superfund sites?

Please see separate letter addressed directly to Senator Mitchell. (The answer is yes; EPA uses existing Federal and State standards for clean-up levels as appropriate. If the GRGL's are relevant and appropriate under the circumstances presented by the release, EPA will use them during Superfund clean-up actions, unless waived.)

SEPTEMBER 19, 1986.

Hon. GEORGE J. MITCHELL,
U.S. Senate,
Washington, DC.

DEAR SENATOR MITCHELL: At the recent hearing held by the Senate Committee for Environment and Public Works you asked whether the Environmental Protection Agency (EPA) would use Ground Water Residue Guidance Level (GRGL) promulgated under the proposed Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). Reauthorization for clean-up actions conducted under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

The CERCLA program routinely examines other agency standards to determine if they are applicable, or relevant and appropriate as a basic goal for clean-up actions. As each site presents unique circumstances, this analysis is conducted on a site-by-site basis. If GRGLs are promulgated under a new FIFRA law, they will, of course, become one of the requirements examined by the CERCLA program as a potential response action target.

The proposed GRGL in the FIFRA bill will be developed solely upon health concerns. For a particular pesticide, the value would be the level of unacceptable health risk. It would therefore seem logical to consider utilizing a GRGL as a minimum target standard for clean-up actions under CERCLA when they are applicable, or relevant and appropriate.

I envision GRGLS being developed by EPA in accordance with Agency risk assessment guidelines and being subject to peer review by the Agency's FIFRA Scientific Advisory Panel. This peer review process allows for expert public review and comment prior to issuance.

If I can be of further assistance, please let me know.

Sincerely yours,

JOHN A. MOORE,
Assistant Administrator.

Senator MITCHELL. Thank you.

Is my time up?

Senator DURENBERGER. No.

Senator MITCHELL. Thank you, Mr. Chairman. I would like to ask a couple more questions concerning the subject you raised earlier, and that is the cancer-causing substances.

Dr. Moore, in the case of cancer causing substances, has the EPA followed a policy of setting maximum contaminant levels to avoid any adverse effects on health at zero?

Dr. MOORE. Again, this is water's area, so I am not totally comfortable, but I am not aware of an MCL dealing with cancer chemicals having been set at zero, but I could easily stand corrected. I am not aware of one, I think that there has always been a finite number. Other people seem to agree with me.

Senator MITCHELL. Is that the case with respect to recommended maximum contaminant levels?

Dr. MOORE. Agency policy has been, a chemical that has been identified as having cancer-causing potential, the RMCL would be set at zero as the goal that we should be achieving.

Senator MITCHELL. Do you plan to continue this policy, or does the agency have any plan to consider metting a residue level of a cancer-causing substance at some level above zero?

Dr. MOORE. I am not aware of discussions going on in the agency that are dealing with setting an MCL for cancer causing chemicals at anything other than zero. I am not aware of it.

Senator MITCHELL. You are not aware of that. Obviously, to the extent of your knowledge, then, your policy has been to set recommended maximum contaminant levels at zero where cancer-causing chemicals are involved, and it is your understanding that you will continue that policy?

Dr. MOORE. I believe so.

Senator MITCHELL. All right, thank you. Thank you, Mr. Chairman.

Senator DURENBERGER. We have concluded our questions of this witness.

Chairman Stafford is here. If you have no questions of this witness, Mr. Chairman, you may want to introduce the next witness.

Senator STAFFORD. I have no questions for this witness. I am prepared, if I may, to introduce the next witness at the appropriate time.

Senator DURENBERGER. It is the appropriate time.

Jack, thank you very much for your help this morning.

OPENING STATEMENT OF HON. ROBERT T. STAFFORD, U.S. SENATOR FROM THE STATE OF VERMONT

Senator STAFFORD. Mr. Chairman, I understand that the next witness will be Roberta Coffin, who is the Vermont Commissioner of Health. For the committee, I would invite her to take the witness stand, and welcome her here.

I might express my personal appreciation to you for conducting these hearings this morning, which I think was a very necessary and essential thing to do.

Roberta Coffin is no stranger to this committee. She was down here recently when we were considering legislation on asbestos in schools and asbestos in other buildings. I will take this opportunity to tell her that we have a bill out of this committee which we are taking steps to bring to the floor. Hopefully, we will be able to do that before the Congress comes to an end, pass it, and get into conference with the House.

I do want to express our appreciation to you, Roberta, for coming down here again. You notice, we have been careful to provide you with Vermont-style weather today so that you would feel right at home here. For the committee, I appreciate your coming and express our gratefulness to you.

STATEMENT OF DR. ROBERTA COFFIN, COMMISSIONER, VERMONT DEPARTMENT OF HEALTH

Dr. COFFIN. Thank you very much, Mr. Stafford.

Senator DURENBERGER. Your full statement has been submitted, and will be made part of the record, you may proceed to summarize it in whatever fashion you deem appropriate.

Dr. COFFIN. Thank you very much, Mr. Durenberger, and thank you for allowing me to testify today on the amendments to FIFRA.

As Mr. Stafford noted, I am the commissioner of health in the State of Vermont, and I am also representing the Association of State and Territorial health officials. I am a board certified pediatrician by training and by practice.

The prevention of ground water and drinking water contamination is key, and we are very concerned about the bill which might protect ground water and drinking water. Our States need to be able to take action long before minimum contaminant levels are reached, which would indicate that there is a clear possibility of health effects.

The responsibility for health risk assessment and the authority to protect health of the citizens of each State rests properly with the State health official. We need strong Federal legislation to support us. These proposals and this responsibility should not be preempted by legislation which assigns this duty to EPA at the national level.

State health departments have had the responsibility for establishing health standards for decades, and State citizens have benefited. Regardless of whether this responsibility is assigned to Agriculture, to the Environmental Protection Agency, or to the State environmental protection unit, the ultimate responsibility lies with the State health department, and it is to the State Health Department that all turn with their questions, "is there an effect on public health". Courts have repeatedly ruled that Federal laws do not preclude State and local laws in this area.

We realize that uniformity is desirable, and we understand that for certain food manufacturers, a national uniform standard would alleviate some anticipated inconvenience in food distribution, but in attempting to address this anticipated inconvenience, the authority and responsibility of the State health officials to establish tolerances designed to protect public health must not be compromised.

State health officials have regulatory authority granted by State legislators and Governors, which should not be preempted. It is inconceivable that the EPA can act any more quickly or more thoroughly to protect the food supply in any given State. States have technical skills and qualified personnel to continue making responsible decisions.

While it is clearly appropriate for the Federal Government to set uniform minimum standards, it is not good public policy to allow EPA to weaken steps taken by States to increase the level of protection for their citizens. In fact, securing the health and safety of their citizens is one of the most important constitutional powers granted to the States.

The need to preserve State authority is further underscored by EPA's poor track record in providing credible and timely pesticide evaluations. There should be a better record and a strong Federal presence in standard setting for chemical residues in food. The States have had to respond to public demands for action in emergency situations, State-specific health risks, and other instances when the Federal regulator has been too slow or unable to act.

The State health department once again, whether responsible for FIFRA, the Safe Drinking Water Act, ground water protection, or whatever, is the focus for these decisions.

Tolerance setting is viewed as an act of judgment, in which risks and benefits must be balanced often in the face of uncertain data. You have discussed this with the previous person who was testifying, and I can't say how difficult it is at the State level to respond to; Is there more than a negligible health risk? Or is this a zero level? Or barely detectable, or nondetectable, or whatever the language of the law is.

This creates not only a burden scientifically on the State health department, but the resources must be available to that State health department in order to make the best scientific judgments that are possible. However, in spite of all these problems, for the most part the system that we have in place has worked, and it has worked for decades.

An imminent health hazard must be addressed directly and not indirectly. The proposed amendment proposes a complex, convoluted regulatory process which would be time-consuming and place undue burdens of proof on State health officials. This approach ignores the definition of an imminent hazard.

The regulatory authority we are requesting the States be allowed to retain today is only one of a whole spectrum of options that we have to accomplish a specified goal. The regulatory option is an extremely important tool, which must be retained, and it will not be used indiscriminately.

You asked how Vermont does in this area. Vermont has a strong history in the area of environmental legislation. In May of this year, our Governor initiated the seven-point plan that will lead to the reduction and minimization of pesticide use in the State of Vermont. Following her lead, I worked closely with Vermont apple growers to sharply reduce the amount of Daminozide or Alar used on Vermont's large apple crop.

I personally met with the Vermont apple growers and urged them to limit or, preferably, omit the use of Daminozide until scientific studies clarify the exact level of risk. All Vermont orchards have Alar-free apples to pick and sell. All Vermont apples destined for processing plants must be Alar free. I have advised the public that until clarity regarding the risk is determined, infants and children especially should limit their exposure to Alar. I advised par-

ents, making apple products for infants and children, to seek Alar free apples from Vermont apples.

The response has been extremely gratifying. Recently, one of the large apple cooperatives in the State announced that they would not accept Alar treated fruit. In addition, Alar was placed in restricted use status by the Vermont department of agriculture.

On the other hand, a State such as Florida had unique problems and needed to rapidly reduce exposure to ethylene dibromide to its citizens. I believe that Dr. Moore talked about Florida's capability to handle such a situation as this without going to a preemption of Federal standards.

In Florida, the exposure of many citizens to ethylene dibromide food residues and gasoline product exposure was compounded by ground water contamination and occupational exposure through its use on citrus products. Here we had to consider the total body burden.

Under this circumstance, citizens of Florida were more heavily exposed to ethylene dibromide than the rest of the Nation. It was appropriate, therefore, for agriculture and health officials in that State to institute restrictive residue levels which were more protective than for the rest of the country.

Many groups and organizations, as you have heard today, have vigorously opposed the amendments under discussion. The FIFRA reauthorization and improvement should not be held up in order to continue this debate. Rejection of the amendments is the appropriate recommendation. The amendment is not in the public health's best interest, nor in the best interest of establishing a safe food supply. States pledge to continue to work, and we will do so without indiscriminately using our regulatory powers.

I appreciate the opportunity to be able to talk with you today, and I will be happy to answer any further questions.

Senator DURENBERGER. Dr. Coffin, thank you very much.

Again, you are not a stranger to these hearings, as the chairman has already indicated, and let me add my gratitude to you for coming down and expressing your concerns on behalf, not only of yourself, but of the commissioners around the country on these issues.

First, it would be helpful to the subcommittee if you could provide us with a description of the Vermont Department of Health, how it is organized, the resources it has or wishes it had, its relationship with the Federal Government, which might give us a little better perspective on what it is that causes a State to take a particular action against a particular pesticide.

Dr. COFFIN. I will be happy to.

Senator DURENBERGER. Then, I have done a little bit of research on the use of tolerances at the State level, and it doesn't strike me that it is that every State is setting dozens and dozens of tolerances at widely varying levels as has been alleged by some people. Is that correct?

Dr. COFFIN. That is true.

Senator DURENBERGER. In fact, to the best of my research, State tolerances have only become an issue twice. One, the EDB case, and now for Alar on apples. Am I correct on that?

Dr. COFFIN. That is true, yes, Mr. Durenberger.

Senator DURENBERGER. In both of those cases, it would appear that the States are more than justified in taking action, and it is not just some form of regulation that States are using against the grocery manufacturers of this country. Am I right in that?

Dr. COFFIN. I believe that this is absolutely correct. We have met as groups of States, the New England group has met together and tried to evaluate the scientific knowledge in the various areas on both of these occasions.

It is difficult to have precise numbers, but the scientific discussions and the conclusions must leave room for some variation of opinion. The State protective action should be taken in a variety of ways which, as I pointed out, include the regulatory option. That always must remain open to State health officials such as myself.

Senator DURENBERGER. It is not the case that States are beating up on manufacturers. Perhaps, it is not necessarily even the case that the Federal Government never does anything, so we have to have the States act. It is really a question of leaving all of our options open, at least that is the way it appears to me.

Dr. COFFIN. It would be the best way to sum it up, yes.

Senator DURENBERGER. The case of EDB was sort of my curve on this subcommittee, and it was interesting to me that the Federal Government really did make a decision on tolerance levels in EDB, they made it way back in the 1950s. The government decided that it didn't have a tolerance. EDB didn't have a tolerance. It decided that EDB didn't leave any residue on food, so a tolerance level wasn't necessary.

Then in the 1970's, the testing techniques got a little bit more refined. However, you define the government, the Federal Government and others, discovered that there was EDB on food. Then in 1975, the National Cancer Institute warned us all, the government and all the rest of us, that EDB was a potent carcinogen, and it recommended that steps be taken to reduce the exposure level. But the Federal Government, in the form of the Environmental Protection Agency, didn't do anything about it.

There are other dates that I could cite, but 1984 was the year that we all recall that Florida started pulling muffins off the shelves, and we all got involved. We look back over 9 years where EPA didn't do a thing, and Florida acted.

We discovered that EPA had had two or three internal reviews and decided to do absolutely nothing, and it still hasn't done anything. You heard Jack Moore say that they are in the process. Anyway, in the middle of the scare, they canceled the registration. If I understand a little bit about what it means to cancel the registration, that means it takes about eight years, or something like that, for the thing to disappear.

The point here is that nothing would have been done, apparently, unless Florida had taken some action. As I said earlier, just using my own constituents, Betty Crocker is still in her kitchen, and the Pillsbury Doughboy is still dancing on the shelves of Florida, Vermont, and all kinds of other places, so I assume that Florida really did not intrude seriously on interstate commerce, and it did not needlessly aggravate the national food distribution system.

So I am wondering, is there any place that the author of this amendment, the chairman of the Agriculture Committee, or any-

body else could come up with some abuses that need to be corrected in interstate commerce, in health, in aggravating the national food distribution system. Is there any evidence that anybody is aware of out there that we have to tolerate food poisoning by Federal edict?

Dr. COFFIN. To my knowledge, there is no evidence for such an undue or untoward step being taken by any State. I think a State health department is responsible for erring on the side of caution, for preventing illness from occurring. Therefore, when there is inaction, or delay in action through a lengthy process which is intolerable, I think the States must be able to take their own action, including regulatory.

There are all kinds of actions that can be taken, and we need to be quite ambidextrous in being able to take all those many kinds of actions, but the ultimate being the regulatory process.

Senator DURENBERGER. Obviously, their desire was not to introduce food poisoning, or to even tolerate food poisoning. Do you think that we could assure them that they and we all are better off with current law, that maybe they ought to withdraw that amendment?

Dr. COFFIN. I would certainly hope that you would do so, and that would be in the best interest, I believe, of the people of this country.

I think that it is noteworthy that during the meetings on ethylene dibromide that State health officials participated in, there were representatives from industry, and we really sat down and talked together. So it is not something where we are not trying to arrive at the same scientific conclusions that do protect people. It was a milestone, I believe, and it was something that we were able to force eventually, being sure that people were not exposed.

Senator DURENBERGER. I heard you say that if your counterpart in Florida decided that your apples, Vermont is a big apple State, that you, Senator Stafford, and Senator Leahy, really, if Florida came to the decision on Alar that it came to on EDB, you would want to see, under current circumstances, Florida make an appropriate decision with regard to Alar if in fact they found the same general findings that they found with regard to EDB. You wouldn't stand in their way even though there might be some temporary economic consequences for Vermont. Am I correct in that?

Dr. COFFIN. That is correct, but I would hope that I was an exemplary health official and prevented that from happening by the actions which I did take, and the cooperation that we had from Vermont apple growers.

Senator DURENBERGER. I think that in summary is what we are up to. If that is the beauty of having a State/Federal kind of a relationship where the States are not discouraged from working together to prevent these sorts of problems from happening.

Dr. COFFIN. I think that that is the goal.

Senator DURENBERGER. Thank you very much.

Senator MITCHELL. Thank you, Mr. Chairman.

Dr. Coffin, I share your opposition to preemption of State authority to set pesticide tolerances for food. I am going to ask a specific question regarding the legislation in that area.

There have been suggestions that the preemption provision be revised to allow States to set more stringent tolerances if EPA lacked

complete health and safety data. To what extent does this partial preemption contained in the bill responds to your concerns?

Dr. COFFIN. I am not sure that I can completely answer that.

Senator MITCHELL. Would you like to do so in writing?

Dr. COFFIN. Yes, I would be happy to.

Senator MITCHELL. Let me perhaps be a little bit more specific.

The partial preemption concept deals with the case where there is a lack of data needed to assess the risks, but it does not address the case where once all the data is in, EPA and the State disagree as to how serious the problem is. For example, I know officials in my home State of Maine disagree with the EPA about the risk of a particular product for young children. In seeking to preserve your right to set tolerances, are you more concerned that the EPA has acted on will act without complete data, or that even with complete data, EPA may set a tolerance which in your view does not provide sufficient public health protection?

Dr. COFFIN. I believe that both could happen, and I think the important thing is that a State be able to interpret the scientific data in the greatest protective interests of its own citizens. However, in the large hearings we have had, it is believed the problem has been somewhat of both, the lack of data and the proper way to interpret the data that does exist.

We are, in science, not very good sometimes at coming up with precise conclusions, even on hard data. I, as a pediatrician, am very understanding of that, that there are a number of ways to treat something or to analyze facts. However, I think that all opportunities and all options must be open to a State in order to provide for maximum protection of the public's health.

Senator MITCHELL. So, in order to satisfy your concerns about preemption, you want the right to establish a different tolerance, even if all of the data is in and EPA sets a tolerance with which you disagree. In other words, you want to cover both circumstances, if inadequate data exist, or where that is complete and there is a difference of opinion between the EPA and the State on what that data means?

Dr. COFFIN. That is correct, but I would hope I would not have to invoke that particular line, and would do so only after hard and face-to-face discussions.

Senator MITCHELL. I understand that, but the authority to do so is important, whether or not you intend to exercise that authority on a frequent or infrequent basis.

Dr. COFFIN. That is correct.

Senator MITCHELL. Thank you, Mr. Chairman.

Senator DURENBERGER. Thank you very much.

Commissioner, I appreciate your being here again, and I will say, for the record, it is that tension, and George has brought it out again, that is important, and the facts are that EDB will be around here for a while to haunt a lot of people, and that is good, because all of the facts were in in 1980, and the Federal Government did nothing for 4 to 4½ years. So I think this discussion has been very appropriate.

Thank you very much.

Dr. COFFIN. Thank you very much. I appreciate it.

Senator DURENBERGER. Our next panel, I am informed, will include representatives of the Campaign for Pesticide Reform, and the National Agricultural Chemical Association, six people if they are still here. Kevin Kessler from the Wisconsin Department of Natural Resources will go with the second panel, because we have six of the participants in the long and lengthy negotiations over FIFRA and ground water.

Senator MITCHELL. Mr. Chairman, may I interrupt you merely to apologize to these witnesses, I have to go to a new function, but I do look forward to reviewing the record of the testimony. I congratulate those who participated in the negotiations that have brought the subject to this point.

Thank you, Mr. Chairman.

Senator DURENBERGER. Thank you, George, very much.

I guess we can begin with Lawrie Mott, and maybe Lawrie can introduce the other people, or you can introduce yourselves.

STATEMENT OF LAWRIE MOTT, NATURAL RESOURCES DEFENSE COUNCIL ON BEHALF OF THE CAMPAIGN FOR PESTICIDE REFORM, ACCOMPANIED BY ERIK OLSON, COUNSEL, POLLUTION AND TOXIC SUBSTANCES DIVISION, NATIONAL WILDLIFE FEDERATION; AND NANCY DRABBLE, EXECUTIVE DIRECTOR, CONGRESS WATCH

Ms. MOTT. Thank you very much.

I am Lawrie Mott, and I am a biochemist and senior project scientist for the Natural Resources Defense Council. Today, with me are Erik Olson, counsel for the National Wildlife Federation, and Nancy Drabble, executive director of Congress Watch. I am testifying on behalf of the Campaign for Pesticide Reform, a coalition of 41 consumer, labor, and environmental groups, supporting S. 2792.

This bill would greatly improve the Federal pesticide law in many regards. One of the most important provisions of this legislation would strengthen EPA's authority to respond to pesticide contamination of ground water and to protect ground water from pesticide contamination. We don't disagree that the focus today we have heard on prevention is important. Much of the legislation in S. 2792 addresses the prevention of pesticide contamination of ground water.

One of the most important aspects of that legislation is to require the submission of full health and safety data on pesticides including, for example, requiring pesticide registrants to submit data on the environmental fate of their compounds, in other words, the ability of those compounds to enter ground water on a specific schedule.

That information will greatly improve EPA's ability to protect ground water from pesticide contamination. But the problem is, right now, that EPA simply is not doing enough to prevent pesticide contamination of ground water or even to respond to pesticide contamination of ground water. In fact, they do very little in reality when pesticides are detected in ground water, and that is why our coalition is supporting the present amendment in S. 2792 on ground water.

This amendment is in no way intended to restrict EPA's existing authority under FIFRA or any other Federal statute to regulate pesticides in ground water, nor is it intended to restrict any State action on pesticides in ground water. The general purpose of this amendment is to establish a mandatory duty on EPA to regulate pesticides detected in ground water, and to prevent that contamination from exceeding levels that cause health concerns.

The amendment functions through four basic provisions. First, pesticide registrants are required to notify EPA whenever a pesticide is detected in ground water, regardless of the amount of that pesticide level. The amendment also underscores EPA's authority to require monitoring by pesticide registrants to look for pesticides in ground water.

The second major function of the amendment is to require EPA to set ground water residue guidance levels, or GRGL's. EPA has a mandatory duty to set those levels in certain instances, and the Agency is also given broad discretion to set the GRGL's whenever they deem it necessary to prevent a pesticide from entering ground water. The GRGL's are to be set at the level which would cause no known or anticipated adverse effects unless an MCL exists.

Next, the amendment establishes an emergency provision for site specific responses. This would be for situations when pesticide levels in ground water have already exceeded the GRGL. In that instance, EPA would be required to notify the Governor of the State immediately of the pesticide detection above the GRGL, and the State would be given 90 days to respond with a site specific action to bring and retain the pesticide level in the ground water to or below the GRGL, or to prevent consumption of the ground water. If the State fails to act, EPA would be called upon to act, and to step in to ensure that pesticide levels in the drinking water wells are brought below the GRGL. However, this site specific response section is an emergency section. We assume that the majority of EPA's actions under this provision will be through the registration amendment section. This section would basically function as a preventative tool.

Fourth, the amendment establishes a mandatory duty on EPA to amend pesticide registrations to prevent pesticide levels in ground water from exceeding the GRGL whenever there is a reasonable likelihood existing that pesticide contamination in ground water may exceed the GRGL. By that I mean that when the pesticide level in the ground water reaches 25 percent of the GRGL. Say, for example, the EPA sets a GRGL at four parts per billion, and the pesticide is detected in the ground water at one part per billion, there is a mandatory duty for EPA at that point to issue registration amendments to prevent the level in the ground water from exceeding that GRGL, that four parts per billion level.

The registration amendments can include a variety of actions. They can include limitations on the method or rate of application. They can include worker training. They can include certification of workers. They can even include use prohibitions.

S. 2792 is in large part a compromise resulting from 1½ years of negotiations between NACA, CPR and others representing pesticide users. Today, a letter will be delivered to the full House and the full Senate from nearly 40 scientists around the Nation sup-

porting that legislation, including the ground water amendment. You will be receiving that in the near future. It is important that scientists around the Nation have recognized the major breakthrough in pesticide reform that this legislation represents. I have an enclosed a copy of this letter with my testimony. (See p. 101.)

Passage of S. 2792, with the deletion of the amendment to preempt State from setting pesticide tolerances, would greatly strengthen protection of public health and the environment from pesticides. We urge you to support this bill and the ground water amendment, and to help assure the legislation's passage in the 99th session of Congress.

That concludes my remarks. I think Nancy Drabble would like to add a few points.

Senator DURENBERGER. Briefly.

Ms. DRABBLE. There are just two points that I would like to add to Lawrie's statement.

The first one is that pesticides are being found in ground water every day, and under current law there is no mandatory duty on EPA to do anything about that until it becomes necessary to cancel the pesticide because it causes unreasonable adverse effects. That is waiting too long.

The key point of this amendment is that it places mandatory duties, which are judicially reviewable in court, on EPA to act when there is a reasonable likelihood that the pesticide will exceed the GRGL, and, as Lawrie explained, there are presumptions created that when pesticide concentrations in ground water reach 25 percent of the GRGL, EPA must change the terms and conditions of that pesticide's registration, to change the way it is used, to make sure that it does not contaminate the ground water. We believe that that is a very important change over current law.

The second point is more of a political one, just to underscore the fact that it was very difficult to negotiate this ground water provision. Our coalition of 41 consumer, environment and labor groups support it. The National Governors Association supports it. The American Farm Bureau supports it. Obviously, NACA supports it, as they will discuss.

We hope that any necessary adjustments in this provision that may be suggested by the Environment and Public Works Committee will not delay the consideration of this important pesticide reform bill. There is very little time left in this session, and we all hope to get this important environmental bill to the floor of the Senate as soon as possible.

Senator DURENBERGER. Thank you very much.

Jack Early.

STATEMENT OF JACK D. EARLY, PRESIDENT, NATIONAL AGRICULTURAL CHEMICALS ASSOCIATION, ACCOMPANIED BY DR. LOY NEWBY, DIRECTOR, PUBLIC AFFAIRS, AGRICULTURAL DIVISION, CIBA-GEIGY CORP.; AND SCOTT FERGUSON, VICE PRESIDENT-GENERAL COUNSEL, NATIONAL AGRICULTURAL CHEMICALS ASSOCIATION

Mr. EARLY. Thank you, Mr. Chairman.

It is a pleasure to appear before this committee today to discuss the proposed amendments to FIFRA, and more specifically to the ground water amendment that is of great deal of interest to this committee.

Mr. Chairman, NACA is a nonprofit industry association of approximately 90 agricultural chemical manufacturers and formulators. Our members supply virtually all of the $4 billion U.S. agricultural pesticide market today.

With me today, on my left, is Dr. Loy Newby, who is the director of public affairs, agricultural division of CIBA-GEIGY Corp., and also the chairman of our water quality committee at NACA. On my right is Mr. Scott Ferguson, NACA's vice president and general counsel, and also, I might add, the preeminent expert on this ground water provision. I will rely very heavily on him, Mr. Chairman.

Earlier this year, Mr. Chairman, NACA wrote you regarding your series of hearings on ground water protection. We expressed our commitment to working with you and the subcommittee to address issues associated with agricultural chemicals and ground water protection. We wish to renew that commitment.

We are pleased to report that since that letter, our industry and the Campaign for Pesticide Reform, CPR, a coalition of over 40 environmental, consumer, and labor organizations, have reached agreement on important changes to FIFRA regarding pesticides in ground water.

As you may be aware, our agreement with CPR on ground water and other important changes to FIFRA is reflected in the amendment pending before the House and the Senate. We are hopeful that these amendments will be enacted into law this year. I would like to reemphasize the concern that Nancy Drabble just expressed about the timeframe in which we are operating.

The process of reaching agreement on FIFRA amendments addressing pesticides in ground water has been difficult. Discussions between negotiators of our industry and the environmental coalition began over a year ago, and both sides have made some important concessions. Our initial position was that FIFRA provided adequate authority to deal with ground water issues, and the proposals made by the coalition were overreaching and unreasonable.

After many hours of difficult negotiations, our industry came to recognize that major changes to FIFRA dealing with this subject may be needed, in many respects similar to what the environmental coalition initially proposed. Similarly, the negotiation efforts made by Senator Paula Hawkins to achieve a compromise supported by the Senate Committee on Agriculture resulted in further concessions, but a stronger amendment because of the broadened support for the amendment.

The result of these negotiations is a tough but fair compromise. It is important to recognize that this spirit of compromise has been embraced by the House of Representatives as well. We understand that the House Agriculture Committee will be following closely the outlines of the Senate ground water language in developing a committee amendment for the House floor.

These ground water amendments are now an integral part of the package of FIFRA amendments in which concessions made during

the negotiations on ground water were taken into consideration in concessions made elsewhere in the amendment package. Significant changes to the ground water amendments would thus adversely affect both support for the ground water amendments and the overall package of FIFRA amendments.

I would like to turn now briefly to a discussion of the amendments. The amendments are designed to fit into and extend the current FIFRA approach in regulating pesticides. The ground water proposal does not deal with liability, remedial action with respect to pesticides in ground water, or how State ground water protection programs should address pesticides. These are subjects that are not currently within the scope of FIFRA, nor does it attempt to amend or affect other Federal laws.

The proposal adopts instead the view, which you, Mr. Chairman, have expressed, that the Federal Government should get potential sources of contamination of ground water under control—in this case pesticides—and to take preventive action before the problems occur. The other issues mentioned, not addressed in the FIFRA amendments, are important and we have an open mind on the need for further legislation at a later date, in FIFRA or elsewhere, on those subjects.

Mr. Chairman, you have already heard some analysis of what the amendment does, I will skip over that part of my statement. As you may recognize from the description you have heard from Lawrie Mott and others, the ground water amendments to FIFRA are an important legislative opportunity. It will indeed be unfortunate if this opportunity is missed and we lose the benefits, not only of addressing pesticides in ground water this time, but also the many other concerns that have also been addressed in the companion amendments to FIFRA.

In closing, Mr. Chairman, we would like to thank you and the subcommittee for allowing us to speak to you on these important proposed ground water amendments to FIFRA, and we stand ready to respond to any questions you may have.

Thank you, Mr. Chairman.

Senator DURENBERGER. Thank you very much.

Lawrie, let me begin with you, and let me just say that my impression of the testimony from this panel is that various of the interests involved in FIFRA have spent a lot of time working out a compromise that, through a variety of forms, you feel is necessary to pass this year, but that it is a compromise. Is that your understanding of it?

Ms. MOTT. I think that it is a fair and tough compromise. I think that it will really establish a mandatory duty for EPA to react to pesticide contamination, and I don't think that EPA right now is doing enough, and without this amendment, we wouldn't have any real action from EPA in the near future, or even in the distant future on pesticide contamination. I think that the bill is fully supportable from an environmental point of view.

Senator DURENBERGER. Would I interpret that to mean that if we were doing comprehensive ground water legislation, rather than an amendment to FIFRA, the NRDC would be in here telling us that nondegradation is important, and degradation, you don't like, and I could go through a variety of things that I don't find in this bill,

that I find foreign to some of the organizations who have views on ground water?

Ms. MOTT. We would absolutely be in here supporting you in any future ground water legislation. I think that one of the key aspects of the bill is that it addresses pesticides within the narrow context of FIFRA. It addresses them within the context of the way the registration system works in FIFRA, and that is, it require EPA to respond to pesticide detection in ground water.

Senator DURENBERGER. But isn't it a fact that the Agriculture Committee bill sanctions ground water degradation? It authorizes contamination up to some level set by EPA and called a GRGL. Is that not a fact?

Ms. MOTT. It is required for EPA to respond once the levels reach a certain amount. However, in return for, I suppose, the fact that the trigger is other than zero, what we get is something that is not typical within the FIFRA context: in other words, we do not have pesticides in ground water regulated on the unreasonable adverse effects standard that typically would guide pesticide regulation under FIFRA. So it is a distinction from the existing FIFRA framework for addressing pesticides in ground water. In fact, it is a major strengthening of that.

Senator DURENBERGER. I understand that it is different from current law. I just want to know where NRDC and some of these other organizations stand on degradation of ground water. I want to know where they stand on zero tolerance for an RMCL or MCL for carcinogens. You heard testimony here this morning from Jack Moore and others that we may have to tolerate a little carcinogens in our drinking water, and I just want to know where you stand on that issue.

Ms. MOTT. NRDC is working on a variety of fronts. As you know, we are working in both legislative fronts, as well as on the administrative front on the establishment of RMCL's and MCL's at EPA. We will continue both these types of efforts: establishing the strongest ground water protection legislation and setting the strictest MCL's and RMCL's possible.

Senator DURENBERGER. You talked about the requirements on EPA as it relates to the registration process. Let me ask a similar question regarding the site specific response authority. As I read this bill, EPA is given some authority, which to me is a little vague, to address site specific problems, but only if the GRGL is exceeded and the State has failed to act.

My question of you is why wait or why tolerate a legislation that permits the EPA to wait until the GRGL has been exceeded if the purpose is to prevent contamination, rather than wait until it is contaminated and then take some action?

Might we not presume that contamination is pesticides in amounts more than the GRGL can occur as you monitor a certain specific site or region, you watch the levels rise in some fashion, and that it might be more appropriate to take action at 50 percent, or some other percentage?

Ms. MOTT. I think that there has been, in many ways, almost too much focus on the site specific response section. The registration amendments section is really going to be the operative section of the provision.

In other words, once that reasonable likelihood standard is exceeded, EPA is going to issue registration amendments that will prevent the GRGL from ever being exceeded, and that, I think, is one of the most important aspects of this provision. The site specific response section is sort of an emergency stop-gap measure for when the levels do exceed the GRGL. Hopefully, the legislation will assure that EPA takes action before the GRGL's are exceeded.

Ms. DRABBLE. I think that we can do more than hope that EPA will act because they are required to act at the lower level, below the GRGL. If they do not act, I can guarantee you that the NRDC and other organizations will be litigating to make sure that they do meet that requirement in the legislation to act before the GRGL is exceeded.

Senator DURENBERGER. A couple of questions for both sides here, Jack.

There is a distinction made in the legislation between current drinking water supplies and potential drinking water supplies. Why is the distinction made, and why do we not treat all underground sources of drinking water the same way?

Mr. EARLY. Let me ask Mr. Ferguson if he can respond to that.

Mr. FERGUSON. In the first instance, I think, it is fair to say that in principal respects the bill deals with both potential and current drinking water the same. The objective is the same, that is, we are not to allow continued use of a pesticide under a registration that would allow the GRGL to be exceeded.

What we have added with respect to potential drinking water is to require EPA to take into consideration various other factors, common sense sorts of things, such as coordinating with other Federal agencies, consulting with the States as to their regulatory response and views on the subject, and other such factors which may bear on effective regulatory programs with respect to potential and current drinking water.

Senator DURENBERGER. Do you want to respond to that?

Ms. MOTT. I would underscore what Scott has said. The key provision for the registration amendments is the same for current and potential, and that is that the registration amendments have to prevent the GRGL from being exceeded. It is the same in both instances. The distinction is that in the potential area, EPA is allowed to consider additional information in designing those registration amendments.

Senator DURENBERGER. Let me ask you both a question that I asked Jack Moore earlier as it relates to the ground water residue guidance level issue. I thought that we had come close to resolving it with Jack, but I just want to make sure how both sides here view the issue of whether or not this is solely a health-based standard, or whether we use the risk/benefit test.

Let me start with you, Jack, and I will ask you. Do you think that the GRGL established by this legislation is to be strictly healthy based, or will your organization argue that EPA has to weigh the benefits of the pesticide use against the risk of ground water contamination when it sets the GRGL?

Mr. EARLY. I don't think, Mr. Chairman, I would have any difficulty agreeing with Jack Moore that these sorts of things are health driven, when you establish these GRGLs and other issues. I

think that to assume otherwise would be a mistake. Either one of my colleagues might like to add to that, but certainly in my opinion it has to be health driven as Jack Moore has said.

Senator DURENBERGER. Health driven, I don't want to leave that one open. Jack always leaves us with the feeling that he is very close to what the response we are looking for, but he always has room to get out of it. Let me just ask the question bluntly. Are you going to come in and argue that in coming to a decision on a GRGL, EPA is required to weigh the benefits of pesticide use against the risk of ground water contamination when they set the GRGL, yes, or no?

Mr. FERGUSON. The answer is no. The benefits in setting the GRGL are not to be considered. The amendment clearly lays out what criteria are to be considered. The MCL, as set up in the Safe Drinking Water Act, does not factor in benefits nor does our amendment.

Senator DURENBERGER. Do you have any comment?

Ms. MOTT. Yes, that was our understanding, that benefits would not be considered in setting the GRGL, but I would also like to elaborate on some of the other things that are considered in the setting the GRGL, which I think are a significant improvement from criteria that EPA uses even now in setting RMCL's, and that is the specific requirement that if all chronic toxicology is missing, the GRGL be set at the level of detection, or effectively the way a zero tolerance would be implemented. There is also a requirement in the legislation for the consideration of an additional margin of safety for factors of uncertainty about the quality and completeness and validity of the data. Those are important requirements on EPA to make sure that the GRGL is set at the best number possible.

Senator DURENBERGER. Jack, I have another question that I would like to ask you that relates to the issue of liability for damages. The usual hypothetical example that I use when I talk about damages to ground water is the farmer who applied herbicide to his field for many years, following very explicitly the directions for use, and then discovers to his dismay that the leaching of the herbicide has contaminated the drinking wells in the little town, which his farm happens to adjoin. Then when Roberta Coffin, or someone else, comes down to shut down the wells in this little town, the question is, who is going to be liable, the farmer, the herbicide manufacturer, or the community.

In your view, is there any Federal statute now that would authorize EPA, for example, to impose the cost of digging a new well or wells for the town on farmers? Do we have anything like that in current law?

Mr. EARLY. I am going to have Scott respond to the question generally. My impression is that, no, unless you are relating it to a requirement to keep a product registered in the marketplace. I think that the Environmental Protection Agency has rather extensive and expansive requirements that they can undertake if you want to keep a product registered in the marketplace.

If you don't choose to follow those requirements or demands of the agency, then they can certainly take you off the market.

Senator DURENBERGER. But we have a bunch of wells shut down in a little town in Vermont now. Is there a statute that says that farmers, responsible for applying pesticides that leach into the ground water and cause the community's water wells to be shut down, have to bear the cost of the damages to the community, such as by putting in new wells, or anything like that?

Mr. EARLY. I am not aware of such a statute, but maybe Scott can comment on that.

Mr. FERGUSON. We may be collectively getting a little bit out of our field. We are not as familiar as you are, certainly, with CERCLA and other environmental statutes.

Our understanding is that under Superfund there is authority to impose, on potentially responsible parties, not only damages, but also equitable relief to provide, for instance, alternate drinking water supplies.

Senator DURENBERGER. What I am trying to get at here is, the authority may be there, but it has never been exercised, to my knowledge.

I assume that it is not going to be used because of the impracticality of putting on farmers the burden of digging new wells or something else. Are there, to your knowledge, any State authorities that would require farmers to dig new wells, or otherwise respond in money damages, or anything like that?

Do we have any evidence out there that farmers are being used in some way to their major financial disadvantage in site specific cases?

Mr. EARLY. Let me ask Loy if he would respond to that. Maybe he could give us a little bit of an example. I am aware of a situation in Wisconsin where we did some early work on legislation that related to ground water, and perhaps Loy could comment on that area.

Mr. NEWBY. I can respond to that, but I think the correct person to ask would be Kevin Kessler, who is on the next panel. He is from Wisconsin and much more knowledgeable. There was in the beginning, and I am sure it is still in effect, a way for the farmer to have new water or a new well. Then I believe the State has the option to come back at the company. I think that he should expand on that.

Senator DURENBERGER. We will get to him on the next panel. Is there a Federal statute or any State statutes that would impose liability in the circumstance that I outlined for you on the manufacturers of pesticides?

Mr. NEWBY. Only to that extent, the State of Wisconsin, I believe, can come back at the manufacturer of the product if it can determine the source of the product.

Senator DURENBERGER. The current situation is that there is some legislative authority that says that EPA, in certain statutes, can hold farmers responsible, but we don't have any evidence that they ever have. Addressing the practicalities here, as we have, let me ask the question differently, is there some need for us to protect the American farmer from the consequences of strict, legitimate application of Aldicarb, or any of the rest of these things that we have been discussing.

Mr. EARLY. It is my understanding, and Scott can expand on this, that this is exactly what we have done in this liability provision under FIFRA here. We have made a presumption here that the farmer has used the product correctly according to the label, and one must challenge whether or not he actually used the product according to the label. So the presumption is there that he used it correctly.

It is my understanding, as a layman, of this total liability issue, it is clear that my member companies are going to be involved in the liability situation with our products. It is almost like the automobile situation, I am not always completely in control of our products. There are times when certainly I am going to be liable, and the courts are going to find me in that situation. But I don't really think that we ought to be in a position of absolving everyone of any liability potential or otherwise because they use my products. I just don't think that I can go that far, and I don't think that you would ask me to go that far.

Senator DURENBERGER. The reality seems to be that on the basis of the knowledge that we have available to us, which seems to be somewhat less than satisfactory, the system has been working the way a market-based system would normally work, and that is, you put a product on the market, with all of the knowledge that you have available, and after a few years, you learn. When you learn things, nobody has beat up on any American farmer because of the Aldicarb potato situation, or anything else. But Union Carbide, Monsanto, or someone else is in there doing a lot of the research work, digging up facts, helping monitor.

It may not be perfect, but the manufacturer, in a competitive environment, with a consumer that has a need for a herbicide, or whatever the case may be, is in there helping get the job done. In fact, because somebody has to respond at some point to all of those little people in that little town in Vermont, whose wells are now shut because of deficient knowledge, or something else has polluted the wells.

I am just wondering if anybody on this panel sees anything deficient in the current law in terms of the liability issues, or who is responsible for damages. Is there a necessity to have that amendment that somebody put on there that says farmers are not liable for damages?

Ms. DRABBLE. I think the important thing about that amendment is that it only applies if there were an action under Federal statute, not under tort law or under State statute, but under Federal statute, for damages. It is only in that instance that there would be a presumption that the farmer was not liable. However, that provision in our view does not apply to any actions under Federal law for abatement, civil penalties, or fines, or any other application, but only if there is an action under Federal statute for damages resulting from the agriculture use of a pesticide.

Senator DURENBERGER. I want you to tell me why it is necessary.

Ms. DRABBLE. It is a question better addressed to the Farm bureau.

Senator DURENBERGER. No, I am addressing it to you. I want you to tell me if it is necessary, if in fact that is your view. If your view is different, then I would like to have a different answer.

Ms. DRABBLE. I think this provision is part of the compromise, and it does not damage any environmental statutes.

Senator DURENBERGER. How did this get into the compromise? At what stage did this particular provision get into the compromise?

Ms. DRABBLE. In the House.

Senator DURENBERGER. In the House?

Ms. DRABBLE. Yes.

Senator DURENBERGER. At what point in time?

Ms. DRABBLE. I can't recall whether it was at the subcommittee or the full committee level.

Senator DURENBERGER. In August, or July?

Ms. DRABBLE. No, in June.

Mr. FERGUSON. It was in the early spring, I think, in the springtime. It was fairly late in the negotiating process.

Senator DURENBERGER. Does this have something to do with a public works project some place in this country?

Mr. FERGUSON. Not to our knowledge.

Senator DURENBERGER. One of these has something to do with a certain Congressmen who didn't get a public works project, and now all of a sudden they have public works projects?

Ms. DRABBLE. No.

Senator DURENBERGER. It must be something else that I am thinking of.

Mr. FERGUSON. Senator, I did want to say that NACA reads the liability section that you referred to earlier, and the one that Nancy was talking about, section 821, the same way. When we refer to damages, we meant damages, and not equitable relief. It is a narrowly and carefully crafted section.

Senator DURENBERGER. Just by way of observation, since we have to conclude this panel and get to our last panel, I am certainly not a major expert on this subject, the staff of the committee and other members of the committee are, but I have the distinct feeling that, as is true with everything in legislation, some compromises have been taken that probably would not have been taken in quite the same way if this committee had been involved, but they have been taken, and I have to hope that in some way or another that the work that we and others are doing on ground water is not going to be delimited in some way by the compromise.

My instincts also tell me that the difference in approach here is largely remedial. It has some preventive aspects to it, but it is largely remedial. The instincts of this committee, in an era of limited financial resources, leans much more heavily on prevention than I see in this so-called compromise.

Maybe some of the suggestions that we might have, I know that it is now supposedly too late to affect this compromise, but some of the suggestions that we might have are not that we disagree with the compromise, but that our desire is to get more "prevention" for the benefit of everybody involved in this process.

Certainly the message here, from this panel in particular, is that you have labored long and hard, and you are at the stage where you would like to adjourn on October 3 and have a piece of legislation, and that will certainly not fall on deaf ears in this committee, even though we have a number of bills on which we have labored long and hard for many years in this committee that we don't seem

to be able to get to the end of September. But you will also have to tolerate, I suspect, some reaction from us in the next couple of days to our analysis of the impact on ground water protection of the compromise that you have come up with.

I appreciate very much all of the work that all of you and others have put into bringing this matter to this point and for being here today. Thank you.

Our final panel includes Kevin Kessler, the Wisconsin Department of Natural Resources, Velma Smith, the Environmental Policy Institute, Mark Maslyn, the American Farm Bureau Federation, and Gary Englund on behalf of the Association of State Drinking Water Administrators from the Minnesota Department of Health.

Let us begin with Mr. Kessler, and all of your statements will be made part of the record, try to keep the summaries as brief as we can.

STATEMENT OF KEVIN KESSLER, CHIEF, GROUND WATER MANAGEMENT SECTION, WISCONSIN DEPARTMENT OF NATURAL RESOURCES

Mr. KESSLER. I am here on behalf of the Wisconsin Department of Natural Resources, which is our State's lead State agency for ground water protection monitoring. Our statutes, which establish the ground water standards program and require all State agencies to comply with the standards, were enacted in 1984.

The proposed ground water-related amendment to FIFRA, which you have before you, have been described as being drafted to follow the Wisconsin model. The amendments have many very positive aspects, but they do not follow the Wisconsin model. There are a number of key improvements which are necessary if the legislation is to help, rather than be a hindrance to our State programs.

First, the definition of "potential drinking water" is objectionable. It is not clear how the "depth to drinking water" or "shallow ground water" are taken into account. Our law protects all ground water regardless of depth because water moves vertically within an aquifer. The Wisconsin standards apply both at the property line and at the point of use. The proposed definition also begs the question of whether ground water containing one contaminant, such as nitrates, is to be written off and not protected from pesticides. We suggest that the term "underground source of drinking water" from the Safe Drinking Water Act be substituted for the term "potential drinking water."

Second, based on our experience in Wisconsin, the groundwater residue guidance level is not closely enough tied to the drinking water program in EPA. The present wording is that the Administrator "may" use a health advisory level and that he shall "consider" the level at which there would be no adverse health effects. The ground water residue guidance level should be identical to the maximum contaminant level. If no MCL exists, the criteria should be the same as for the MCL goal, except for carcinogenic substances, allowing an acceptable level of risk. The Administrator should not be allowed the discretion to be inconsistent with the criteria in the Safe Drinking Water Act. It should also be clear that a

State may establish a more stringent standard than the Federal standard, both for ground water as well as for food. This position is supported by Governor Earl.

Third, and related to Senator Baucus's earlier question, a two-tiered standards approach similar to Wisconsin's should be included in the legislation. This is necessary to make the legislation preventive rather than strictly reactive. It has been suggested that the two-tiered standard approach might be discussed in the legislative history. We believe that it needs to be part of the act. We will be happy to work with the subcommittee staff to explain this approach further.

Fourth, the requirements for site-specific action by EPA should be eliminated or substantially amended. Site specific actions should be left to the States. EPA neither wants nor could handle such responsibilities. Consideration should be given to changing the language to allow for EPA imposed prohibitions in large regions with the possibility of EPA granting site specific exceptions to the regional prohibitions. I would add that that is strictly one alternative. Furthermore, the present language allows EPA to take no action if a State has taken action to "prevent consumption of drinking water exceeding such level." Upon a finding of contamination, we always take such action by advising well owners in our State to avoid consumption of the water. The reaction of prohibiting the consumption of the water should not be allowed as an alternative to a preventive program for protecting the ground water resource.

Fifth and last, the notification section in the amendment should be expanded. Registrants generate only a small portion of the ground water monitoring data for pesticides. Many States like Wisconsin are operating ground water monitoring programs because of the responsibility for drinking water and ground water protection, which they have. The notification section should be expanded to allow any person, but particularly a State agency, to file a report which the Administrator would have to review.

Since the red light is not on, I would add as a sidelight, that in developing our State legislation, we, as a State agency, were somewhat in the same position as the last panel. We were part of the deal, part of the compromises that had been struck. My personal observation on this compromise, as opposed to the one that we struck in Wisconsin, is that in Wisconsin we had both the executive branch of Government and key representatives of the legislative branch that were part of the negotiations and part of the compromise, and I don't see that as part of this compromise in the last panel.

We would welcome an opportunity to work with the subcommittee staff.

Senator DURENBERGER. I think that it says something about what is happening to America. It looked here like the special interests, which had held up the public policy for *x* number of years, finally found some way to combine their special interests, so now none of us can see the forest, except for the trees. It is not a very good thing to say about America, and the way we make policy, but it is a compliment to them that they were able to resolve their differences.

Mr. KESSLER. Thank you, Senator.
Senator DURENBERGER. Velma, please proceed.

STATEMENT OF VELMA SMITH, DIRECTOR, GROUND WATER PROTECTION PROJECT, ENVIRONMENTAL POLICY INSTITUTE

Ms. SMITH. Thank you, Mr. Chairman.

I greatly appreciate this opportunity to testify on behalf of the Environmental Policy Institute. I should start by just adding my thanks to those who have worked so hard to bring the FIFRA reauthorization this far. We appreciate their efforts, however, we are still very much concerned and share some of the concerns that you have raised with the ground water section.

We feel strongly that passage of the amendment as drafted would not only fall short of what needs to be done to protect human health, but also actually signal a retreat from commitment to ground water protection that you initiated with passage of the Safe Drinking Water Act earlier this year.

We believe that the bill actually encourages EPA to act in a crisis response, rather than problem prevention mode. It also appears to sanction the contamination of future drinking water sources beyond established human health levels. In addition, we feel that it fails to clarify crucial questions regarding EPA's authority to impose monitoring requirements on pesticides registrants.

While we recognize that the bill does establish new mandatory duties for the Administrator, we believe that the assurances we might derive from those mandates come in trade for some very bad policy precedents. It is not a deal which we are willing to buy into.

Our written testimony covers in some detail a variety of substantive and procedural problems that we consider significant. I will offer a few highlights.

Monitoring, on first glance, might appear to be the least controversial element of the ground water protection program, but not so in this case. This section may fit into what Dr. Moore described earlier as problematical. Here the bill appears to mimic, rather than expand, existing authority, allowing EPA to require monitoring if additional data are required to maintain in effect an existing registration.

That particular language, unfortunately, appears to be less than straightforward and is subject to different interpretations by EPA and by the National Agricultural Chemical Association. We believe that if the Congress is indeed serious about a Federal program, then it must clarify this monitoring authority and provide for imposition of monitoring costs on the responsible party, in our view, the registrant.

On the issue of the GRGL's, our problem is a simple one. We do not believe that the MCL's which are, as this committee well knows, technology based standards, are appropriate for use in so-called pollution prevention programs. Using the MCL's as standards then implies acceptable levels of pollution, and then using exceedance of those standards as a trigger for action, this program virtually assures that water utility actually violates standards under the Safe Drinking Water Act before action is taken.

We believe that this is a serious error, and we urge the committee to amend this section. We would support an approach to standard setting which is modeled after the Wisconsin program, with ground water standards set, as Kevin said, by statute below the levels at which human health is endangered. That type of standard, with the adequate monitoring, would allow for mitigation efforts before the problem gets out of hand.

In the area of site-specific response, we just see too little, too late. At the point at which drinking water standards have been exceeded, property has been damaged, perhaps irreparably. A response program triggered at this stage should speak to issues of well replacement, water treatment, and damage compensation.

This section has been described as an emergency response, and if it is to live up to that billing, it should provide immediate notification to water users and immediate assistance in securing alternative water supplies. The amendment is silent on those points, and leaves open to the States the frankly inhumane option of merely condemning a well, hardly a solution for the injured water user.

We have included a suggested list of changes to this section in the written testimony.

On the last section, we agree with the negotiators that this could be perhaps the most crucial and most useful element, but we are troubled that EPA is directed to use a potentially effective tool, the registration amendment, only after it finds compelling evidence that pesticide concentrations will reach unhealthful levels in drinking water wells, not in the aquifers, not in the zones of influence, but in the wells.

Further, this section, as you have pointed out, makes a perplexing distinction between current and potential drinking water sources. The implication we see here is that the contamination of potential drinking water may be allowed, or even sanctioned, where experts fail to predict future water needs adequately, or where States, by fiat, simply declare usable ground water resources unusable.

Thus, there appears to be a shortsighted notion that ground water contamination is of little consequence until it intersects a point of human exposure. That notion is in our view based on faulty assumptions, and it is a misguided one. It is hardly the basis of a public policy which will be effective in preventing ground water pollution.

We believe this section can be amended simply by creating one requirement for EPA to initiate registration amendments to protect, as Kevin said, underground sources of drinking water. We believe that a definition of underground sources of drinking water should be based on the Safe Drinking Water Act definition, and we would be glad to suggest specific language.

In summary, we would suggest, if this committee cannot, in the short timeframe available, correct these very serious problems, then the issue of pesticides in ground water perhaps should be set aside from the remainder of the FIFRA reauthorization so as not to jeopardize that legislation. We believe that it would be better to bring this issue up again for reconsideration early next year, and within the context of a broader ground water protection initiative if solutions cannot be found.

I appreciate the opportunity. Thank you, Mr. Chairman.

Senator DURENBERGER. Thank you very much. Mark.

STATEMENT OF MARK MASLYN, ASSISTANT DIRECTOR, NATIONAL AFFAIRS DIVISION, AMERICAN FARM BUREAU FEDERATION

Mr. MASLYN. Thank you, Senator.

The Farm Bureau is the Nation's largest general farm organization, with over 3 million member families in 49 States and Puerto Rico. Farm Bureau members produce nearly every agricultural commodity grown or raised in commercial quantities in the United States.

The Farm Bureau supports S. 2792, the FIFRA reauthorization bill reported by the Senate Agriculture Committee. The bill is the product of a long and arduous discussion, negotiation and compromise among a broad cross-section of interests.

From the perspective of agricultural producers, there are several provisions viewed as key to continued support of the bill. One of these is the section dealing with the prevention of ground water contamination. Farmers and ranchers are very concerned about the problem. It has the potential to affect agricultural operations in a profound way. Furthermore, it presents farmers with a unique dilemma, pitting safe drinking water against the use of essential crop protection aids.

Farm Bureau views the ground water provisions in the FIFRA bill as a workable and reasonable approach to the problem. They are supported by agricultural, environmental, industry, and State organizations.

Slightly over a year ago, I appeared before this committee outlining the Farm Bureau position on Federal ground water legislation. This bill moved toward several of those objectives in a constructive way. Specifically, this bill does not concentrate authority at the Federal level, and thereby preempt or discourage State actions. It does prescribe certain responsibilities to EPA, and reinforces others, such as the urgent need to expedite the establishment of maximum contaminant levels and other ground water numbers.

Farm Bureau has long felt that the site specific nature of the problem makes it absolutely essential that States and local governments have the primary responsibility for responding to ground water contamination problems. This bill supports that concept. Also included in the package is clear authority for EPA to require monitoring by chemical companies when pesticides have been detected in ground water.

Still another important provision contained in the bill addresses the question of liability. The bill provides protection from liability under Federal law to farmers who have followed federally approved label guidelines in the use of agricultural chemicals.

In conclusion, we support the ground water provisions in S. 2792 and believe they constitute a credible and workable program for dealing with the problem.

I want to thank the committee, and I would be happy to answer any questions that you may have.

Senator DURENBERGER. Thank you very much.

Gary.

STATEMENT OF GARY ENGLUND, CHIEF, SECTION OF WATER SUPPLIES, MINNESOTA DEPARTMENT OF HEALTH, AND MEMBER, ASSOCIATION OF STATE DRINKING WATER ADMINISTRATORS, ACCOMPANIED BY FRED MARROCCO, DIRECTOR, BUREAU OF WATER SUPPLIES, PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES AND LEGISLATIVE COMMITTEE CHAIRMAN, ASSOCIATION OF STATE DRINKING WATER ADMINISTRATORS

Mr. ENGLUND. Mr. Chairman, with me today is Mr. Fred Marrocco, program director of the Drinking Water Program for the State of Pennsylvania. He is also the legislative chairman of the Association of State Drinking Water Administrators, and he will be presenting our testimony on the FIFRA amendments.

Senator DURENBERGER. Does it mean that you got him inside the door because you are from Minnesota?

Mr. ENGLUND. My only entree.

Senator DURENBERGER. I thank both of you for being here.

Mr. MARROCCO. The Association appreciates the opportunity to present comments to the subcommittee on the ground water related amendments to the FIFRA reauthorization.

We commend the subcommittee on its efforts to ensure that any amendments to S.2792, intended to protect ground water supplies against pesticide contamination, will achieve this goal. We agree that specific statutory authority to enhance regulatory agency abilities to mitigate the potential for pesticide contamination of ground water supplies is desirable, and the Congress should be commended for taking this initiative.

While the ground water authority amendment recently offered has constructive provisions, we have several concerns regarding its language. Specifically, we question whether the language under consideration will actually provide a preventative mechanism for the protection of ground water as is presumably the intent; and, secondly, whether it will burden the regulatory agencies and public water supply systems with an inequitable share of the costs associated with the protection, confirmation, monitoring, and mitigation of contamination problems resulting from pesticide use.

With respect to the coverage and scope of the proposed amendment, the bill should make clear its intent to protect both current and potential sources of drinking water. Current sources of drinking water should include the aquifer or aquifer systems supplying the drinking water well. The response mechanism should not be restricted to the presence of pesticides in the drinking water well, but should be expanded to include the presence of pesticides in current or potential sources.

With respect to the designation of action levels, the proposed amendment specifies that a substance's maximum contaminant level, the MCL, if promulgated under the STWA, the Safe Drinking Water Act, is to be used as the basis to trigger mitigative site specific responses.

The Association does not support this approach. We believe that by using MCL's as action levels, degradation of the aquifer is virtually assured, and any early warning or preventive value envisioned for this requirement would be lost. As has been clearly document-

ed, the recovery of contaminated aquifer is, in most cases, a very long term process, frequently taking many years.

We believe the ground water protection programs must be proactive for maximum efficiency and effectiveness with regard to public health protection. To ensure such a proactive posture with regard to the FIFRA provisions, it is our recommendation that action levels be set low enough so that the mitigative action will avert violation of the MCL. Instead of the MCL, we recommend one of the following alternatives for action levels.

A percentage of the MCL could be used based on the severity of the health effects attributable to the exposure to the pesticide. Alternatively, the use of maximum contaminant level goals, the health-based goals for standard developed under the Safe Drinking Water Act would provide reasonable protection from significant contamination. In the case of carcinogenic substances for which the goals are typically zero, or substances for which the goal is below the detection limit, the action level should be set at the limit of detection.

With regard to authority for regulatory response to contamination, the proposed amendments appear to be highly restrictive in specifying when a mitigative response to a ground water contamination problem could commence. Further, they would appear to be reactive rather than preventive in nature.

We believe that the existing language is not consistent with the stated goal of protection of underground sources of drinking water by making it difficult for EPA to respond to contamination problems in a timely and effective manner.

There are several aspects of these provisions which the association finds troubling. First exceedance of either an interim or final action level should be grounds for response. Second, we fail to understand why violation of the action level must be documented at wells currently providing drinking water in order for response actions to commence. We believe that both current and potential sources of drinking water should be afforded the same level of protection from pesticide contamination.

Also, it is difficult to imagine how the EPA would be able to determine that contamination resulted only from the use in accordance with labeling specification even if they had the resource to undertake such detailed site by site evaluations. Perhaps a preferable approach would be to assume applicators are abiding by the label directions, and that registration amendments are called for when ground water contamination is documented.

If the conditions for regulatory response actions are met, the State has 90 days to take appropriate action to reduce the contamination level below the action level, or to prevent the consumption of the drinking water. Both of these responses are impractical, especially within the established time frames, and given the resources available to the States. More importantly, the latter response does nothing to correct the contamination problem.

In the event that the State does not take action, the EPA is authorized to intervene. At that time, the EPA has the authority to prohibit the use of the pesticide in the vicinity of a contaminated well, but only after considerable administrative requirements are met.

We believe that when pesticide contamination is detected in a source of drinking water, and the EPA determines that the pesticide use prohibition is the appropriate response, that action should be enforced immediately until it can be demonstrated in administrative hearings that another response would be more appropriate.

In summary and conclusion, the basis and intent of any ground water protection provisions to be included as part of the FIFRA reauthorization should be the protection of the public health and the prevention of pesticide contamination of current and potential sources of drinking water. It should provide regulatory agencies with the authority, funding and mechanisms to effectively achieve these goals. Flexibilty and authority for State governments to initiate similar or more stringent ground water protection programs should also be explicitly provided for.

The Association of State Drinking Water Administrators appreciates the opportunity to provide this testimony to the subcommittee.

Senator DURENBERGER. Mark, let me ask you a question on section 821, the liability issue. I think you know that when this committee finally found out about the nature of the language, the concerns were communicated to the proponents of the amendment, particularly the concerns regarding the ability to preserve abatement authority under CERCLA in particular, I think, and civil penalties. Some language, I think, has been circulated clarifying the language?

Do you have a view that you want to share with us on the Farm Bureau's position on that language?

Mr. MASLYN. I am not familiar with the language that you are suggesting.

Senator DURENBERGER. Have you seen any language that would clarify the amendment to section 821?

Mr. MASLYN. Yes. The language that I understand you are referring to is the approach that was proposed late in the Superfund Conference.

Senator DURENBERGER. I am not sure.

There is a colloquy that is being circulated by Agriculture Committee staff. Have you seen that?

Mr. MASLYN. No, I have not seen that.

Senator DURENBERGER. Do you know whether the Farm Bureau would support the FIFRA amendments without the ground water provisions in them?

Mr. MASLYN. I would respond that the liability the ground water provisions were one of the fundamental reasons for our becoming interested in working to pass a FIFRA bill this year.

The problem of liability is one that has been around for just a few years, it is relatively new. It is something that farmers in the countryside are very, very concerned about. Our policy, adopted by our members in county, State, and national meetings, directs us to work to absolve farmers from liability when they have followed the label. This is what we have attempted to do in the FIFRA debate.

Senator DURENBERGER. I hear that concern as I go around, too, but I hear more from what you call growers than I hear it from farmers. In my State, I hear a lot more farmers caring a lot more about what it is they may inadvertently be doing, not their own

problem, not the problem to them, but the problem that they are creating for other people.

Mr. Kessler, let me ask you, do you think the amendment to section 821 is necessary in clarifying the liability of Wisconsin farmers on the damages caused by pesticide use?

Mr. KESSLER. There was an earlier question about a well replacement program, and we have such a program in Wisconsin. That program provides that the State can sue the responsible party to recover the costs that are paid to well owner. I am not aware of a theory in Wisconsin under which we could recover costs from the manufacturer or the farmer if they followed the label instructions on the registration.

Senator DURENBERGER. Let me, while I have you, Mr. Kessler, is it a fact that yesterday, Wisconsin took some action on Aldicarb? I know that you were contemplating doing something, impose further restrictions on the use of Aldicarb. Did you do it, or could you describe it for us?

Mr. KESSLER. Our State division of health conducted an epidemiologic study in central Wisconsin on residents who were consuming Aldicarb in their drinking water. They found indications of immune system suppression in blood test indicators, and as a result, last night, they announced that they were changing their health advisory for the concentration of Aldicarb and lowering it from the present 10 parts per billion to our detection limit of 1 part per billion.

Senator DURENBERGER. Gary, I earlier made some reference to information that is coming in in Minnesota on what they call out here alachlor, and we generally refer to it as Lasso, the brand name. Could you describe the Minnesota studies for us?

Mr. ENGLUND. Senator, we instituted a 2-year sampling program for pesticides in a number of different types of wells in the State of Minnesota. Our program is really four-phased. Phase One is a testing of 25 sites on a time series basis, eight times over a year. The second phase is a sampling of approximately 200 private wells in an agricultural setting. Phase Three is sampling approximately 400 community and non community wells, which serve the general public. Phase Four is really a program under the Department of Agriculture to sample approximately 100 wells immediately adjacent to application sites in the field. These are shallow monitoring wells, first water, four times during a timeframe.

At this point in time, since we are only starting the second year of the study, the data that I have to report on is assumed to be preliminary data. At this point in time, we are finding that approximately 40 percent of our wells that we are testing, of course, these are worst case type situations, it is not a random sampling, but it is a biased sampling to try to determine the worst cases of pesticide contamination in the State. We are approaching approximately 40 percent of our wells that contain one or more pesticides and one or more samplings.

At this point in time, out of the 25 time series sampling, we have 24 of the 25 wells that have experienced one or more pesticides in one or more sampling. Of the other sampling programs, we are running roughly 35 to 40 percent positive.

As far as alachlor is concerned, on the time series monitoring, we have seven wells that are positive for alachlor, and it is interesting that a majority of the sample that were collected for pesticides that had the presence of alachlor, as the time series samplings have occurred, the levels are dropping.

It seems to indicate to us that you do have a higher elevation immediately following application. Of course, as we progress with our study, the information will be forthcoming.

Senator DURENBERGER. Does Minnesota set a health based standard for alachlor?

Mr. ENGLUND. Yes, we do.

Senator DURENBERGER. What is it?

Mr. ENGLUND. It is 10 parts per billion, which is based on a 1 in 100,000 health risk.

Senator DURENBERGER. How do you react to the information from Wisconsin on Aldicarb?

Mr. ENGLUND. It is kind of interesting. When Wisconsin was reporting Aldicarb presence 3 or 4 years ago, at that point in time, we did a number of sampling sites and conditions that were very similar to Wisconsin. In fact, the samples were run in a laboratory which was the same laboratory that Wisconsin was using, we did not find the presence of Aldicarb.

Aldicarb is also one of the products that we are using in our pesticide scan at this point in time, and we have still not found a positive detection of Aldicarb in Minnesota.

Senator DURENBERGER. Across the country, in the places where we found it, the debate has been, as I recall it, at least around here, between 30 parts per million and 10 parts per million, and now you are saying that Wisconsin, at least in one part of Wisconsin, it is one part per million?

Mr. KESSLER. The advice of our State health department, the statewide advice is that people should not be consuming water with any Aldicarb.

Senator DURENBERGER. Mr. Marrocco, I am going to conclude this right now. We may have more questions to submit to various witnesses, but it would be helpful if you would provide, on behalf of the association that you are the legislative chair of, information about the costs of prevention versus the costs of detection and correction.

I don't want to make too much this morning in this setting of our prevention approach, but I think we have learned a lot of it from some of you people in the safe drinking water business. In other words, it would be a heck of a lot cheaper, better, and whatever, if we would put more of this emphasis on prevention, the problem being for all of us, particularly those of us who represent rural America—this is where you can be helpful to us—give us some idea of the costs to communities, and small communities in particular, to monitor for pesticides, to buy treatment technology, and to do all of this kind of remedial after the horse has been stolen kind of activity.

Mr. ENGLUND. Senator, as a point of interest on costs, the Minnesota program is analyzing approximately 700 wells for pesticides, and the total cost of that program will approximate about half a million dollars. Our total costs, mepending on how many param-

eters we are looking for, will run anywhere from $250 to $750 per sample, and that is a nonprofit lab.

Senator DURENBERGER. The point of all of this is that if you direct your efforts to policies in the direction of prevention, you can also have them do cleanup and that sort of thing. But if the basic policy is aimed toward prevention, and everybody who is involved in the process understands that, then we get everybody working together, and the research that is necessary can come from manufacturers. The manufacturers are confused. They see a policy that is sort of cleanup oriented, and that sort of thing, then the first thing that they and others do is run to protect farmers, or whoever. Then you get good guys and bad guys, and that is really not what this business is about.

We really are trying to keep ahead of a knowledge curve, I think, in this area, and the best way to do that is, I think at least, and this is a bias that this committee probably has, to try to aim ourselves into the future, and aim ourselves in the direction of prevention, while we try to find the remedial ways to handle it also. If everybody is playing the prevention game, then we have a lot more actors involved, particularly those who are doing the application and those who are providing the products to be applied. Those are the people that we would like to have most involved in this whole ground water protection process.

I thank the panel, and its individual members. I thank everyone who appeared today.

The hearing is adjourned.

[Whereupon, at 1:02 p.m., the subcommittee adjourned.]

[Statements submitted for the record follow:]

STATEMENT OF SENATOR PATRICK LEAHY
BEFORE THE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE
CONCERNING AMENDMENTS TO THE FEDERAL INSECTICIDE,
FUNGICIDE, AND RODENTICIDE ACT
SEPTEMBER 9, 1985

Mr. Chairman, I am pleased to have the opportunity to testify before the Committee today. I am pleased that you have scheduled this hearing on possible amendments to S. 2792 -- the bill recently reported from the Agriculture Committee -- and I will support any amendments from this Committee that will make the bill more effective in protecting human health and the environment.

The Federal Insecticide, Fungicide, and Rodenticide Amendments Act of 1986 -- S. 2792 -- is one of the most important bills to be considered by the Senate Agriculture Committee in this Congress. A great deal of effort has been expended in the development of this bill, and there are many provisions of the bill that are major improvements to existing authorities.

However, certain provisions of the Committee reported bill, if enacted without change, cannot be considered as major improvements to a statute that is designed to protect human health and the environment. In particular, the Committee has adopted two provisions that I believe should be modified or deleted before the Senate adopts the bill.

The first such provision is an amendment to section 24 that establishes uniform pesticide tolerance levels. In essence, the amendment prohibits a State from establishing a pesticide residue tolerance level more restrictive than the federally established level. I believe this amendment should be deleted from the bill.

The second such provision is the addition of a new section 31, "Protection of ground water." I believe the new section could and should be modified to provide for better environmental protection.

UNIFORM TOLERANCES

During consideration of FIFRA amendments by the Agriculture Committee, a provision was adopted that limits the ability of a State to limit pesticide contamination of food. While the Committee adopted my suggestion to "sunset" this provision in 1991, I still have deep reservations about the need, the precedent, and the administrative problems involved.

The amendment could improperly preempt a State's authority to limit pesticide contamination in the food chain in order to protect the health of its citizens. One Governor has stated that the authority to protect the health and safety of citizens is one of a State's most fundamental powers. I agree, and I believe that States should retain that right.

As with other areas of pesticide regulation, Federal tolerances should be used as mandatory minimum standards, but a State should have the option of adopting a stricter standard of protection for its citizens. Marketing convenience simply is not a sound reason to deprive the States of this basic right.

State-established tolerances are the exception rather than the rule. Though States have long been able to set and enforce tolerances within their borders, they have exercised this authority with respect to only two pesticides--ethylene dibromide (EDB) and daminozide.

In 1984, several States established separate tolerances for EDB, a soil fumigant and a fumigant for citrus, stored grain, and other food products. Such State actions were prompted by a lengthy delay in establishing a Federal tolerance level for EDB. EDB became a problem only after EPA delayed action on the compound even after widespread findings of EDB residues in many foods, in many geographical areas, and after EPA was unable to conclude a chaotic regulatory review of the pesticide's registration. Without a binding legal standard for residues, States were left to their own to act until Federal law could catch up with the explosive situation. If anything, the EDB example indicates that potential action by a State may serve as a good prod for EPA, deterring sluggish reactions in the future.

This year, two States established separate tolerances for daminozide, a growth regulator used primarily on apples and peanuts. Again, State actions have been prompted by delays at the Federal level in setting a safe tolerance level when evidence indicated one was needed. In September 1985, EPA announced plans to cancel registrations of daminozide because of data showing it to be a carcinogen. But in January 1986, the Agency reversed that decision and decided to ask for further data which will not be submitted until 1988. The States decided not to wait for the Federal government to obtain further data to quantify the health risk and acted to protect their citizens from exposure to this chemical.

The record of State tolerance-setting shows a clear pattern of responsible action--nothing in the history of this issue suggests that a State has acted to willfully obstruct commerce. Rather, the actions have been taken in the light of clear risk when the Federal government has been unable, under Federal law, to take responsible action expeditiously.

Parallel statutes expect the Federal government to establish minimum standards that States may make more stringent. The Clean Air Act, the Clean Water Act, and the Resource Conservation and Recovery Act all allow States to be more strict.

As a practical matter, the public should not consider any public agency to be infallible and, even with all requested data

on file and fully evaluated, EPA could err. A report of the EPA Science Advisory Board on tolerances in 1980 urged EPA to improve the method used to estimate and express the level of human exposure. Specifically, EPA was urged to improve the accuracy of estimates of exposure from ingesting pesticide residues on food, and to better quantify human exposure from sources other than ingestion.

Several groups, largely food manufacturers and distributors, support this prohibition on strict State-established pesticide residue tolerances because they envision chaos in commerce--a patchwork of State regulations concerning food would make it difficult for national food companies to do business. I believe their fears to be unfounded--the banning of EDB and daminozide are the only examples of State action anyone can point to--and, under any circumstances, public health is a more important concern than possible, limited, temporary disruptions of interstate commerce.

The uniform tolerances provision adopted by the Committee is opposed by 92 chemical companies, 41 environmental, labor, and consumer groups. Deleting this provision during consideration of the bill on the Senate floor would be wise environmental policy.

GROUNDWATER

Groundwater pollution is a matter of grave concern. We all have a vital interest in having EPA do more to assure that public health is not jeopardized by exposure to pesticide-contaminated groundwater.

S. 2792, as reported by the Committee on Agriculture, deals with pesticide contamination of groundwater. I am not convinced, however, that the provision the Agriculture Committee has adopted will adequately address this serious and growing problem. The provision could be stronger and could better emphasize concern for protecting our water resources. I understand that the Committee on Environment and Public Works will consider legislation that will accomplish this objective.

I am concerned that the bill reported by the Agriculture Committee may inadvertently be doing a great disservice both to the Nation's present groundwater users and to future users if we hold out the promise of a Congressional response to this problem that falls short of what could and should be done.

First, it is imperative that the groundwater section not be read as a restriction on EPA's groundwater authorities. It is an expansion and addition to current authorities. The record must be absolutely clear on this point.

This section does not restrict EPA authority under other provisions of this Act, but there are no other provisons in this Act which speak exclusively to groundwater. This section, on the

other hand, is entitled "Groundwater Authority" and it includes, along with certain new mandates to the EPA Administrator, a restatement of existing monitoring authority. That combination could imply a consolidation of all groundwater authority into one section of FIFRA. Certainly, the Committee does not intend to restrict EPA authority.

Second, the groundwater section goes to the heart of the public policy directions we would choose -- if we accept this amendment as reported by the Committee. I believe that our national environmental policy must be established with a view to the Nation's long-term interests, and with an view toward preventing, rather than merely responding to, contamination of our water resources. Unfortunately, the groundwater section of the Committee-reported bill offers a groundwater policy that is based almost exclusively on response. Surely we will not be satisfied with ignoring safety hazards until disaster strikes. I do not believe that Congress intends to sanction contamination. We must not condone the contamination of groundwater, and must take all reasonable steps to prevent contamination.

EPA must accomplish a massive task in the area of pesticide regulation in the next few years. The General Accounting Office's recent assessment of the Pesticide Office's resource needs indicates that the bill will not bridge the gap between EPA funding needs and resources available. As a result, no matter how well we might draft the section dealing with site-specific

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responses, the Agency cannot mount an effective effort against pesticide contamination of groundwater on a case-by-case response basis. In order to better protect underground sources of drinking water, EPA must use its authorities more effectively and when necessary amend pesticide registrations. And in this area, the groundwater amendment reported by the Agriculture Committee is--despite considerable effort on the part of the drafters--still woefully inadequate.

EPA should not be in a position of waiting until there is "a reasonable likelihood" that drinking water standards will be exceeded in wells in several localities before EPA initiates proceedings to amend the registration of a leaching pesticide. Nor do I believe Congress intends to establish a short-sighted policy that offers lesser protections to underground sources of drinking water that have not yet been tapped. Surely we do not intend to condone contamination beyond drinking water standards simply because the contamination does not happen to intersect a drinking water well. Frankly, I fail to see the difference between that approach and the approach that the Agency has already stumbled into with Temik and EDB. EPA's past timidity is not a satisfactory model for new public policy.

EPA clearly needs to look ahead, to assess the pesticides that are leaching into groundwater, and to work with the manufacturers and the users of such pesticides to assure that the national label restrictions limit to the greatest extent

practicable the contamination of underground sources of drinking water.

I believe that the registration amendment section of the reported bill should, and hopefully will, be interpreted by EPA so as to establish a regional but proactive approach -- responding to contamination of groundwater at levels of concern, but moving on registration amendments before drinking water sources that we use today or that we may need tomorrow are in serious jeopardy. However, I am deeply concerned that the section might be interpreted otherwise, and I cannot support a Congressional "answer" that may be used as an excuse for inaction.

CONCLUSION

Mr. Chairman, years of effort on the part of several organizations concerned about safer uses of pesticides have been devoted to formulating a FIFRA bill this year. For example, many organizations supported S. 2215, the bill I introduced with Senators Lugar and Proxmire, and that bill is the source of many provisions of S. 2792. Such organizations include the Campaign on Pesticide Reform--a coalition of 41 consumer, environmental, and labor groups--and the National Agricultural Chemicals Association, whose membership includes some 92 companies. I would hope that we can pass a bill in the Senate that rewards the efforts of those groups.

ADDITIONAL VIEWS OF SENATOR PATRICK LEAHY
CONCERNING AMENDMENTS TO THE FEDERAL INSECTICIDE,
FUNGICIDE, AND RODENTICIDE ACT

The Federal Insecticide, Fungicide, and Rodenticide Amendments Act of 1986 is one of the most important bills to be considered by the Senate Agriculture Committee in this Congress. A great deal of effort has been expended in the development of this bill, and there are many provisions of the bill that are major improvements to existing authorities.

However, certain provisions of the Committee reported bill, if enacted without change, cannot be considered as major improvements to a statute that is designed to protect human health and the environment. In particular, the Committee has adopted two provisions that require modifications, and I believe that the provisions should be modified or deleted before the Senate adopts the bill.

The first such provision is an amendment to section 24 that establishes uniform pesticide tolerance levels. In essence, the amendment prohibits a State from establishing a pesticide residue tolerance level more restrictive than the federally established level. I believe this amendment should be deleted from the bill.

The second such provision is the addition of a new section 31, "Protection of ground water." I believe the new section could and should be modified to provide for better environmental protection.

UNIFORM TOLERANCES

During consideration of this bill by the Committee, a provision was adopted that limits the ability of a State to limit pesticide contamination of food. While the Committee adopted my suggestion to "sunset" this provision in 1991, I still have deep reservations about the need, the precedent, and the administrative problems involved.

The amendment could improperly preempt a State's authority to limit pesticide contamination in the food chain in order to protect the health of its citizens. One Governor has stated that the authority to protect the health and safety of citizens is one of a State's most fundamental powers. I agree, and I believe that States should retain that right.

Several groups, largely food manufacturers and distributors, support this prohibition on strict State-established pesticide residue tolerances because they envision chaos in commerce--a patchwork of State regulations concerning food would make it difficult for national food companies to do business. I believe their fears to be unfounded--EDB and daminozide are the only examples of State action anyone can point to--and, under any circumstances, public health is a more important concern than possible, limited, temporary disruptions of interstate commerce.

As with other areas of pesticide regulation, Federal tolerances should be used as mandatory minimum standards, but a State should have the option of adopting a stricter standard of protection for its citizens if it sees fit. States need the flexibility to protect their populations for a variety of reasons.

Arguments about marketing convenience do not justify depriving States of this basic right.

State-established tolerances are the exception rather than the rule. As mentioned above, though States have long been able to set and enforce tolerances within their borders, they have exercised this authority only rarely--once in to restrict ethylene dibromide (EDB) and, later, to restrict daminozide.

In 1984, several States established separate tolerances for EDB, a soil fumigant and a fumigant for citrus, stored grain, and other food products. Such State actions were prompted by a lengthy delay in establishing a Federal tolerance level for EDB. EDB became a problem only after EPA delayed action on the compound even after widespread findings of EDB residues in many foods, in many geographical areas, and after EPA was unable to conclude a chaotic regulatory review of the pesticide's registration. Without a binding legal standard for residues, States were left to their own to act until Federal law could catch up with the explosive situation. If anything, the EDB

example indicates that potential action by a State may serve as a good prod for EPA, deterring sluggish reactions in the future.

This year, two States established State tolerances for daminozide, a growth regulator used primarily on apples and peanuts. Again, State actions have been prompted by delays at the Federal level in setting a safe tolerance level when evidence indicated one was needed. In September 1985, EPA announced plans to cancel registrations of daminozide because of data showing it to be a carcinogen. But in January 1986, the Agency reversed that decision and decided to ask for further data which will not be submitted until 1988. Some States decided not to await results of tests they believe will result in cancellation of the registration. In other words, some State governments are convinced that the chemical is a carcinogen. The States decided not to wait for the Federal government to obtain further data to quantify the health risk associated with exposure

The record of State tolerance-setting shows a clear pattern of responsible action--nothing in the history of this issue suggests that a State has acted to willfully obstruct commerce. Rather, the actions have been taken in the light of clear risk when the Federal government has been unable, under Federal law, to take responsible action expeditiously

There is no precedent for this "uniformity" provision. Parallel statutes expect the Federal government to establish

minimum standards that States may make more stringent. The Clean Air Act, the Clean Water Act, and the Resource Conservation and Recovery Act all allow States to be more strict.

As a practical matter, the public should not consider any public agency to be infallible and, even with all requested data on file and fully evaluated, EPA could err. A report of the EPA Science Advisory Board on tolerances in 1980 urged EPA to improve the method used to estimate and express the level of human exposure. Specifically, EPA was urged to improve the accuracy of estimates of exposure from ingesting pesticide residues on food, and to better quantify human exposure from sources other than ingestion. As long as man is infallible, the more checks than can reasonably be used, the safer will be the human environment.

The uniform tolerances provision adopted by the Committee is opposed by 92 chemical companies, 41 environmental, labor, and consumer groups. Deleting this provision during consideration of the bill on the Senate floor would be wise environmental policy.

GROUNDWATER

The Committee reported bill deals with pesticide contamination of groundwater. However, the provision could be stronger and could better emphasize concern for protecting our water resources. Groundwater pollution is a matter of concern,

and we all have an interest in having EPA do more to assure that public health is not jeopardized by exposure to pesticide-contaminated groundwater.

I am not convinced, however, that the provision the Committee adopted adequately addresses this serious and growing problem. Further, the Committee may inadvertently be doing a great disservice to the Nation's groundwater users and to future users if we hold out the promise of a Congressional response to this problem that falls short of what could and should be done.

It is imperative that the section not be read as a restriction on EPA's groundwater authorities. It is an expansion and addition to current authorities. The record must be absolutely clear on this point.

This section does not restrict EPA authority under other provisions of this Act, but I would point out that there are no other provisons in this Act which speak exclusively to groundwater. This section, on the other hand, is entitled "Groundwater Authority" and it includes, along with certain new mandates to the Administrator, a restatement of existing monitoring authority. That combination could imply a consolidation of all groundwater authority into one section of FIFRA. The Committee does not intend to restrict EPA authority.

The second major problem with the groundwater section goes to the heart of the public policy directions we would choose -- if

we accept this amendment as reported by the Committee. I believe that our national environmental policy must be established with a view to the Nation's long-term interests, and with an view toward preventing, rather than merely responding to, contamination of our water resources. Unfortunately, the groundwater section of the Committee-reported bill offers a groundwater policy that is based almost exclusively on response. Surely we will not be satisfied with ignoring safety hazards until disaster strikes. I do not believe that Congress intends to sanction contamination. We must not condone the contamination of groundwater, and must take all reasonable steps to prevent contamination.

Members of the Committee understand well the massive task EPA must accomplish in the area of pesticide regulation in the next few years. I suspect that few of us were surprised at the General Accounting Office's recent assessment of the Pesticide Office's resource needs. The bill will not bridge the gap between EPA funding needs and resources available. As a result, no matter how well we might draft the section dealing with site-specific responses, the Agency cannot mount an effective effort against pesticide contamination of groundwater on a case-by-case response basis. EPA must use its authorities effectively to amend pesticide registrations to protect underground sources of drinking water. And in this area, the amendment before us is--

despite considerable effort on the part of the drafters--still woefullly inadequate.

I do not believe any Member of the Committee wants EPA to be in a position of waiting until there is "a reasonable likelihood" that drinking water standards will be exceeded in wells in several localities before EPA initiates proceedings to amend the registration of a leaching pesticide. Nor do I believe the Committee intends to establish a short-sighted policy that offers lesser protections to underground sources of drinking water that have not yet been tapped. Surely we do not intend to condone contamination beyond drinking water standards simply because the contamination does not happen to intersect a drinking water well. Frankly, I fail to see the difference between that approach and the approach that the Agency has already stumbled into with Temik and EDB. EPA's past timidity is not a satisfactory model for new public policy.

EPA clearly needs to look ahead, to consider the pesticides that are leaching into groundwater and to work with the manufacturers and the users to assure that the national label restrictions limit to the greatest extent practicable the contamination of underground sources of drinking water.

I believe that the registration amendment section of the reported bill should, and hopefully will, be interpreted by EPA so as to establish a regional but proactive approach --

responding to contamination of groundwater at levels of concern, but moving on registration amendments before drinking water sources that we use today or that we may need tomorrow are in serious jeopardy. However, I am deeply concerned that the section might be interpreted otherwise, and I cannot support a Congressional "answer" that may be used as an excuse for inaction.

CONCLUSION

It would be unfortunate if the bill were to stall in the Senate at this point because of these defects. Years of effort on the part of several organizations concerned about safer uses of pesticides have been devoted to formulating a FIFRA bill this year. For example, many organizations supported S.2215, the bill I introduced with Senators Lugar and Proxmire, and that bill is the source of many provisions of the Committee reported bill. Such organizations include the Campaign on Pesticide Reform -- a coalition of 41 consumer, environmental, and labor groups -- and the National Agricultural Chemicals Association, whose membership includes some 92 companies. I would hope that we can pass a bill in the Senate that rewards the efforts on the part of those groups.

TESTIMONY OF
JOHN A. MOORE
ASSISTANT ADMINISTRATOR FOR
PESTICIDES AND TOXIC SUBSTANCES
U.S. ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE
SUBCOMMITTEE ON TOXIC SUBSTANCES AND
ENVIRONMENTAL OVERSIGHT
OF THE
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE

SEPTEMBER 9, 1986

Good morning, Mr. Chairman and members of the Subcommittee. I am here to discuss with you EPA's goals and programs to effectively manage the risks posed by pesticides which, through routine use, may leach to ground water. The setting for this discussion is your consideration of the amendment offered by Senator Hawkins which would add explicit ground water protection provisions to FIFRA.

As the Administration noted in its position on H.R. 2482, EPA already has the authority to regulate chemicals that pose ground water problems. Additional legislation, in our view, is unnecessary given the program EPA is currently mounting.

Our primary goal is to prevent the contamination of ground water that is a current or potential source of drinking water with pesticides at levels which could pose unreasonable adverse effects to human health or the environment. I believe that a national focus on prevention will, in the long term, be

the best way to significantly reduce the need for difficult, costly response actions, and will ensure the continued availability of a useable ground water resource.

Our secondary goal is to provide, in close cooperation with the States, timely and appropriate response action when wells are contaminated by pesticides.

In meeting our primary prevention goal, EPA plans to set forth a nationwide strategy for protecting human health and the environment from unreasonable risk associated with ground water exposures, while assuring continued beneficial use of pesticides. This may include a rather detailed, comprehensive plan for managing pesticide use effectively, to prevent problems in the future. The States must play a major role in this plan, since a strong Federal-State partnership is critical to managing use and effecting solutions, and to defining broad national goals as well as making site-specific decisions.

As part of these activities, EPA is developing a national, Agricultural Chemicals in Ground Water Strategy. Through the strategy development process, we are inviting full and public debate on the myriad of issues surrounding the management of pesticide use to protect ground water. EPA sponsored a workshop this summer including State, industry, user and public interest group representatives, to obtain the benefit of some early brainstorming by a variety of people concerned about ground water.

Based on this workshop and our own experience to date, we expect to have a draft strategy out for public review and discussion by the end of the year. While the thrust of the national strategy will be "prevention" for both new and old chemicals, it will also encompass "response" to contaminated wells.

In order to effectively prevent and also respond to problems involving pesticides in ground water, EPA must determine the extent and causes of the problem. Our major information collection project at present is the National Survey of Pesticides in Well Water. This survey is the first nationwide, statistically based monitoring program for pesticides in ground water to be conducted in the United States. The preliminary design for the survey is completed and a pilot monitoring phase will begin this winter. Counties are currently being selected for the broad sampling program which will be in full swing next year. By 1989, we expect to have a statistically sound, comprehensive view of the extent to which about 60 pesticides and nitrates are occurring in public and private wells across the country. We expect to gain a better understanding of the relationships between pesticide usage, vulnerable hydrogeology, and the occurrence of pesticides in ground water.

EPA's broad prevention effort includes several other significant information collection and assessment activities focusing on the potential for pesticides to leach to ground water. For example, all new pesticides and significant new uses when first registered, and all "old" pesticides being reregistered, must meet the environmental fate data requirements set forth in our regulations. This means that during the pesticide registration and reregistration processes, EPA is routinely requiring laboratory data on the leaching potential of outdoor use pesticides, and may also require well monitoring studies to determine whether pesticides actually leach under field use conditions. We also have developed and published criteria for determining which pesticides may leach to ground water, which guide our evaluation of the environmental fate data we receive.

EPA is serious about preventing the market entry of new pesticide products or uses that seem destined to leach to ground water under the use patterns proposed. During the past two years, we have rejected several proposed new pesticides and new outdoor uses due to concerns about ground water contamination potential. Examples include carbosulfan ("Advantage"), aldoxycarb ("Standak"), isazophos ("Triumph") and oxamyl. In other instances, we have conditionally registered proposed new products or uses pending the completion of additional environmental fate studies to fully define the leaching potential of the pesticides. For example, imazaquin ("Scepter") was conditionally rather than fully registered last spring due to concerns about its leaching potential.

Similarly, the leaching potential of pesticides long registered by EPA is being scrutinized through the reregistration process. About 50 pesticides have been subjects of Agency requests for additional environmental fate data during our development of Registration Standards. To fully assess the leaching potential of an additional 90 "old" pesticides that are suspected leachers, EPA conducted a special Ground Water Data Call-In two years ago, and we are currently receiving and evaluating the resulting environmental fate data. So far, we have received at least some data on 78 of the 90 pesticides included in the data call-in, and we have determined that 30 of the 78 pesticides have complete environmental fate data bases. 25 of these 30 have been screened by EPA, and 15 of the 25 have been flagged for further review based on our evaluations of the new data we've received. The other 10 do not appear to raise significant ground water concerns based on the data submitted.

EPA also is establishing a mechanism through which we will be notified promptly by pesticide registrants of any pesticide residue findings in ground water. The revised FIFRA section 6(a)(2) rule, which we will publish in final by the end of this year, will require registrants to report within 15 working days any findings of residues of pesticide active ingredients, metabolites or degradates in ground water.

EPA also will continue to use its authorities under FIFRA section 3 to require monitoring by pesticide registrants that is necessary to determine the extent and magnitude of pesticide leaching and contamination problems. The Agency has required many small scale and large scale monitoring studies by registrants in recent years and is likely to continue to do so in years to come. More recenty, we have required and are overseeing four pilot industry-conducted monitoring programs. Using our experience with these pilot programs, we are developing pesticide monitoring guidelines to assist registrants who may be required to conduct monitoring programs in the future, and to assist State and county governments in their monitoring efforts.

EPA is also involved in a number of collaborative monitoring studies with State and county governments and with other Federal agencies, and provides technical assistance to many governmental and academic monitoring programs.

Determining health advisory residue levels in ground water, which pertains to both prevention and response, is clearly a significant Federal activity. Health advisories are comprehensive summaries of the toxicology of common drinking water contaminants. That number can then be used to initiate Federal and State actions, either when the number is reached or, ideally, even before it is reached. We need to

be able not only to provide health advisory levels, but also to permit appropriate review of the numbers since they may be the basis for specific regulatory actions. Currently, we rely on the Office of Drinking Water to set Health Advisories for pesticides, as needed. Health Advisories have been published for about 20 pesticides, and approximately 60 more are under development to support the National Survey.

To prevent ground water contamination problems involving pesticides, then, EPA first needs to obtain information on leaching pesticides, evaluate the data, and determine the extent of the potential problem. Health-based advisory numbers can then be used to guide prevention decisions. For example, when a pesticide is found in ground water, EPA can look closely at the terms and conditions of its registration. When the pesticide is found at increasing levels, we would like to move to amend the terms and conditions of registration since the current label is not working as intended. When the health guidance level is met or exceeded, an even more aggressive, response approach may be necessary.

A number of pesticide regulatory authorities are currently available under FIFRA and may be considered for preventing ground water contamination problems.

- EPA may refuse to register a new pesticide or new use, or may conditionally register the new pesticide or use pending completion of further environmental fate studies to define leaching potential.
- We may require registrants to conduct monitoring studies and submit data on the extent of pesticide presence in ground water.
- We may change the rate, timing or method of pesticide application.
- We may impose geographic or "vulnerable area" restrictions to limit or prohibit a pesticide's use in such areas.
- We may restrict a pesticide's use to certified applicators or persons under their direct supervision. EPA is initiating a rulemaking activity in order to set forth the criteria that guide us in restricting pesticide uses that pose ground water threats. To complement this effort, USDA is developing a ground water training module for use in the pesticide applicator certification and training programs.
- We may initiate a Special Review of the pesticide.
- We may suspend and/or cancel the pesticide's registration.

We believe that the strategic planning initiative, information gathering activities, health guidance levels development, and registration amendment authorities discussed will go a long way toward preventing serious problems from pesticides in ground water in the future. However, we also know that the full extent of existing contamination problems is not yet known. It is important, therefore, that EPA define its role and goals now, before responding to incidents of ground water contamination by pesticides.

When pesticide residues are found in a drinking water well, EPA provides a health guidance level if one does not already exist, to assist the State or local government in determining the health significance of the levels detected. If the residue levels found exceed the health guidance level, two types of response actions are needed. First, to immediately protect the health of people who rely on the well for drinking water, safe water must be provided either by treating the contaminated water at the wellhead or at the tap, or by offering an alternate water supply. EPA plans to look to the States to maintain a lead role in managing these immediate response operations. Registrants have also played a role to date in responding to these immediate problems.

Equally important in terms of a complete response effort, however, is addressing the source of the contamination. EPA's role in responding to well contamination incidents is to closely consider the pesticide use circumstances that led to the problem, and determine how extensive the problem might be nationwide and determine how modifications in the use of the pesticide might bring the problem under control. The array of product-specific regulatory options discussed previously as prevention tools may be used equally as effectively to respond to contamination problems. In recent years, EPA has used this range of authorities in responding to contamination problems varying widely in size and severity (the most serious being the EDB and DBCP situations in which suspension and cancellation actions were warranted). We will continue to use the regulatory response authorities of FIFRA to fulfill this important aspect of our role. We will also look to the States to take pesticide regulatory decisions made at the Federal level and fine tune them to suit local circumstances of pesticide use and ground water vulnerability.

In conclusion, many questions remain to be answered and a great deal more work must be done to deal with pesticides in ground water. Through the prevention program I have described, backed up by a sensitive response effort, we plan to move forward in a determined way, using the spectrum of authorities available under FIFRA and our own adiminstrative devices, to get ahead and stay ahead of the pesticides in ground water problems.

This concludes my prepared statement. I will be pleased to answer any questions you may have.

FIFRA Ground Water Hearing, Sept. 9, 1986
Follow-Up Questions by Senator Burdick

Q.1. Is there anything in this reauthorization of FIFRA that you would interpret as restricting the authority EPA currently has?

A.1. No, we believe that EPA would retain sufficient authority to conduct a satisfactory program to prevent pesticide contamination of ground water. The ground water amendment enables EPA to establish a warning system for pesticides in ground water based on health guidance numbers, and then allows the States or EPA to take action when residues are found in ground water. This type of warning system approach will allow EPA to keep check on potential problems involving pesticides in ground water, and to initiate intermediate actions to prevent the development of serious contamination incidents. The amendment also makes explicit EPA's authority to require ground water monitoring by pesticide registrants, which would support the warning system approach.

Q.2. Do you feel that EPA has sufficient authority under FIFRA to take preventive measures before a pesticide reaches groundwater?

A.2. Yes, under FIFRA, EPA has the authority to gather data on pesticides' leaching potential and actual occurrence in ground water, and to initiate control action in response to indications that a contamination problem may be developing.

Q.3. In the registration and reregistration processes, will all pesticides be evaluated with respect to their ability to leach through the soil profile?

A.3. Yes, all pesticides with outdoor uses will be subject to pertinent environmental fate data requirements set forth in 40 CFR Part 158, and all data received by EPA will be reviewed to be certain that the pesticide meets current scientific and regulatory standards. When the environmental fate data received indicate that a pesticide may leach, these data are reviewed to determine whether EPA's criteria for leaching potential have been met. In cases where these criteria are met, the pesticide will be subject to further, more intensive review which may result ultimately in modifications to or denial/termination of the pesticide's registration.

As a result of the special ground water data call-in conducted in 1984, EPA currently is in the process of screening newly-submitted environmental fate data for about 78 of the 90 pesticides believed to have the potential to leach to ground water. About 40 more potential leachers are being evaluated through the Registration Standards process. Meanwhile, proposed new pesticides and significant new uses are being held to the current data requirements and when appropriate are being evaluated against our leaching criteria. Therefore, within the next several years, EPA will have identified and begun addressing the existing pesticides that pose leaching concerns, and will also continue to evaluate new pesticides posing similar concerns as applications for their registration are received.

Q.4. According to your interpretation of the term "reliable analytical data", would sampling of groundwater be done in part on the basis of the likely behavior of the compound in question? For example, if a compound tends to float on water would the gathering of reliable analytical data require that the top of the aquifer be sampled?

A.4. Let me first clarify that the term, "reliable analytical data" was created and is used in the bill more to describe when registrants must submit occurrence data to EPA than to define how data must be developed. Consistent with our views on the proper conduct of ground water monitoring studies, ground water samples may be gathered at any point below the water table or in the saturated zone. However, the guidelines which EPA is developing will likely specify that, in conducting a monitoring project for pesticides in ground water, wells of three depths (high, medium and low) be constructed at the site, regardless of the pesticides involved. By sampling at three depths, variables associated with the chemical and the site may be overcome.

Q.5. As the registration process proceeds, and pesticides are evaluated for their ability to leach to groundwater, do you forsee the evolution of a rule-of-thumb which will tell us from the chemical's characteristics whether it will leach or not?

A.5. EPA already has gone a long way toward developing a "rule-of-thumb" to identify situations in which a pesticide is likely to leach to ground water based on the chemical's characteristics and the field conditions associated with its use. These criteria, published in 1984, represent EPA's best set of parameters to quickly assess a pesticide's leaching potential. They have been used, among other things, to initiate Agency evaluations of particular pesticides, to idenfify the group of 90 pesticides included in the ground water data call-in, and to select analytes for the National Survey. Because our knowledge and understanding of pesticides, ground water and the leaching phenomenon is evolving, EPA would be reluctant to codify these criteria. However, we are steadily improving our ability to use the criteria to estimate in advance which pesticides may leach to ground water during routine use.

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TESTIMONY

THE U.S. SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
SUBCOMMITTEE ON TOXIC SUBSTANCES AND ENVIRONMENTAL OVERSIGHT

BY
ROBERTA R. COFFIN, M.D., COMMISSIONER
VERMONT DEPARTMENT OF HEALTH

SEPTEMBER 9, 1986

Good morning! Thank you for allowing me to testify on S.2792, Amendments to the Federal Insecticide, Fungicide, and Rodentocide Act (FIFRA). I am Dr. Roberta Coffin, Commissioner of Health in Vermont. I am representing the State of Vermont. I also represent the Association of State and Territorial Health Officials. I am a board-certified pediatrician.

The focus of my testimony today will be on two proposed Sections.

The Vermont Department of Health agrees with the testimony which the Association for Safe Drinking Water Administrators has provided to you today on Ground Water Action Levels and concurs with its opposition to these admendments for the reasons they outlined as not being sufficiently protective.

The following remarks are directed toward the proposed Section entitled "Uniform Tolerances.":

The responsibility for health risk assessment and the authority to protect the health of the citizens of each state rests appropriately with the state health official. This responsibility should not be pre-empted by legislation which assigns this duty to the Environmental Protection Agency at the national level. State Health Departments have had the responsibility for establishing health standards for decades and States' citizens have benefitted. The courts have repeatedly ruled that federal laws do not preclude state and local laws in this area as far back as a Supreme Court decision in the early 1900's.

Uniformity is desirable. We understand that for certain food manufacturers, a national uniform standard of the level of pesticide residues in food, might alleviate some anticipated inconvenience in food supply distribution. However, in attempting to address this anticipated inconvenience, the authority and responsibility of the state health officials to establish tolerances designed to protect the public health must not be compromised. State health officials have regulatory authority granted by state legislatures and governors which should not be pre-empted. It is inconceivable that the Environmental Protection Agency can act any more quickly or more thoroughly to protect the food supply in a given state. States have the technical skills and qualified personnel to continue making responsible decisions.

While it is clearly appropriate for the federal government to set uniform minimum safety standards it is not good public policy to allow the Environmental Protection Agency to weaken steps taken by states to increase the level of protection for their citizens. In fact, securing the health and safety of their citizens is one of the most important constitutional powers granted to the states. The need to preserve state authority is further underscored by the Environmental Protection Agency's poor track record in providing credible and timely pesticide evaluations. There should be a better record and a strong federal presence in standard setting for chemical residues in food. The states have had to respond to public demands for actions, emergency situations, state's specific health risks and other instances when the federal regulator has been too slow or unable to act.

Tolerance setting is seen as an act of judgement in which risks and benefits must be balanced often in the face of uncertain data. For the most part, the system which is currently in place works extremely well and has for decades. The amendment would allow states to address an imminent hazard indirectly and through a complex, convoluted regulatory process which would be time consuming and place undue burdens for proof on state officials. This approach ignores the definition of an imminent hazard. The regulatory authority which we are requesting that states be allowed to retain today, is only one of a whole spectrum of options to accomplish a specified goal. The regulatory option is an extremely important tool. It has not and will not be used indiscriminately.

In May of this year, Governor Kunin of Vermont initiated a seven-point plan that will lead to the reduction and minimization of pesticide use in the state of Vermont. Following her lead, I worked closely with Vermont apple growers to sharply reduce the amount of Daminozide or Alar used on Vermont's large apple crop. I personally met with Vermont apple-growers and urged them to limit or preferably omit the use of Daminozide until scientific studies clarify the exact level of risk. All Vermont orchards have Alar-free apples to pick and sell. All Vermont apples destined for processing plants must be Alar-free. I have advised the public that, until clarity regarding the risk is determined, that infants and children, especially, should limit their exposure to daminozide. I advise parents making cooked apple products for infants and children to seek Alar-free apples from Vermont orchards.

The response to this effort has been extremely gratifying. Recently one of the large apple cooperatives in the state announced that they would not accept Alar-treated fruit. In addition, Alar was placed on restricted use status by the Vermont Department of Agriculture.

On the other hand a state such as Florida had unique problems and needed to rapidly reduce exposure to etheylene dibromide to its citizens. In Florida the exposure of many citizens to etheylene dibromide food residues and gasoline product exposure was compounded by ground water contamination and occupational exposure through its use on citrus products. Under this circumstance, citizens of Florida were more heavily exposed to etheylene dibromide than the rest of the nation. It was appropriate therefore for agriculture and health officials in that state to institute restrictive residue levels which were more protective than appropriate for the rest of the country.

Many groups and organizations have vigorously opposed the amendments under discussion. Uniformity is desirable. However, FIFRA reauthorization and improvement should not be held up in order to continue the debate of the uniformity issue. Rejection of the amendment is the appropriate recommendation. The amendment is not in the public's health interest nor in the best interest of establishing a safe food supply. State do pledge to continue to work toward uniformity in the area of pesticide residues and will not use our authority indiscriminately. But we must have the flexibility to act under regulatory powers.

Thank you for your serious consideration of these comments.

Testimony

of

Lawrie Mott

on behalf of the

Campaign for Pesticide Reform

before the

Subcommittee on Toxic Substances and Environmental Oversight

of the

Senate Committee on Environment and Public Works

September 9, 1986

Thank you for the opportunity to testify today. My name is Lawrie Mott and I am a biochemist and senior project scientist with the Natural Resources Defense Council. I am testifying today on behalf of the Campaign for Pesticide Reform, a coalition of 41 environmental, consumer, and labor organizations. Accompanying me this morning are Erik Olson, Counsel, Pollution and Toxic Substances Division of the National Wildlife Federation and Nancy Drabble, Director of Public Citizen's Congress Watch.

In the past, the major sources of human exposure to pesticide chemicals capable of causing both acute and chronic health effects were thought to be either the workplace, for agricultural and chemeical workers, or through the food chain, for the consuming public. Now, a new and disturbing factor has been added to the equation: the increasing body of evidence that pesticides are contaminating groundwater throughout the United States, groundwater that poses a source of drinking water for roughly 115 million Americans.

For many years, pesticides were not considered a threat to groundwater. This was because they were believed either to degrade in the soil or become trapped by impervious layers of soil preventing migration to groundwater supplies. Thus, groundwater contamination legislation almost exclusively addressed "point" sources such as leaking underground tanks or injection wells or seepage from landfills or surface ponds.

The discovery in 1979 of DBCP, a chemical linked to cancer, human birth defects, male sterility and other maladies, in wells throughout California's Central Valley destroyed this false sense

of security. To date, DBCP has forced closure of more than 100 public water wells. The overall number of wells contaminated by DBCP has increased from forty in 1979 to 2,499 in 1984. Curently, 1473 wells in California's Central Valley are unsuited for drinking, cooking, or bathing due to DBCP levels in excess of recommended "action levels" of one part per billion (ppb). Many wells have been shut down permanently or relegated to emergency use only, but other contaminated wells are still in full use. Other nematicides, such as ethylene dibromide (EDB) and 1,2-D, have also forced closure of public water supplies in the state.

Data concerning pesticide contamination of groundwater is sketchy at best due to sporadic or nonexistent monitoring. Nonetheless, EPA's scientists recently determined that by 1985 at least 17 pesticides have been detected in the groundwater of 23 states as a result of normal agricultural use.[1] One year earlier, only 12 pesticides had been detected in the groundwater of 18 states. EPA now anticipates that additional monitoring will reveal more pesticide contamination.

Groundwater surveys by individual states, such as California and Iowa, show even greater amounts of pesticide contamination. For example, in the April 1985 study by the Iowa Department of Water, Air and Waste Management, "Synthetic Organic Compound Sampling Survey of Public Water Supplies," scientists found pesticides in 28 of 70 monitored wells, representing 18 public water supplies. The study sampled for 34 pesticides commonly

[1] EPA, Office of Ground-Water Protection, Pesticides in Ground-Water: Background Document, May 1986, pp. 7-9.

used in Iowa and pesticides detected in earlier studies, and found six. The herbicide Atrazine was detected 35.9% of the water supplies, outranking all other synthetic organic compounds and pesticides. The sampling also revealed the pesticides Bladex, Lasso, Dyfonate, Dual, and Sencor. The study detected more pesticides in shallower wells, reporting: "Neither the occurences of these six particular pesticides, nor the relationship between their appearance and well depth is surprising. Work conducted by the Iowa Geological Survey has shown that the most commonly used herbicides are occuring in groundwater." Concentrations of these pesticides ranged from .09 ppb to 3 ppb, excluding one city's wells, now closed, which produced concentrations of up to 13 ppb.

Iowa Geological Survey studies in northeastern Iowa have found pesticides in 70 to 80% of the cells sampled. By comparison, the April 1985 study reports somewhat lower percentages of pesiticide contamination because the Department took only one or two samples per well, which may not have been collected at the appropriate time to detect all pesticides.

A report, from the California Assembly Office of Research entitled The Leaching Fields — A Nonpoint Threat to Groundwater, found that pesticide contamination of drinking water constitutes "a serious threat to public health."[2] This study found that 57

[2] The Leaching Fields: A Nonpoint Threat to Groundwater, Assembly office of Research, Joint Publications Office (Sacramento, 1985), p. ii.

different pesticides have contaminated almost 3,000 wells in 28 counties. At least 22 of those pesticides have thus far been traced to agriclutural use and the residues were found both in rural and major urban counties, including Los Angeles, Contra Costa, San Diego and Sacramento.

The health threat presented by pesticides in drinking water is obvious. DBCP is known to cause cancer, genetic changes and male sterility and also damage human kidneys, lungs and liver. Increased cancer mortality rates already have been found in parts of California served by wells contaminated by DBCP. A California Department of Health Services epidemiological study found a positive association between DBCP drinking water contamination in Fresno, California and an increased number of deaths from 1970 to 1979 due to stomach cancer and lymphoid leukemia, both linked to DBCP in laboratory experiments.[3] And the pesticide EDB, a "close cousin" of DBCP, was banned in 1984 after being linked to cancer and genetic mutations. Other pesticides found in groundwater include such known or suspected "bad actors" as DDT, aldrin, dieldrin, Lindane, parathion, heptachlor, chlordane, toxaphene and 2,4, 5-T. All of these have been linked to serious chronic health effects and have been placed in restricted use, made the

[3] Richard J. Jackson, "Literature Review on the Toxicological Aspects of DBCP and an Epidemiological Comparison Patterns of DBCP Drinking Water Contamination with Mortality Rates from Selected Cancers in Fresno County, California - 1970-79", California Department of Health Services, 1982.

subject of an EPA "special review", or have been cancelled entirely.

To date, EPA has done virtually nothing to address the growing threat of pesticide contamination of groundwater. A small number of states have enacted programs to control and prevent pesticide contamination but EPA still lacks even a bare-bones program to focus on this problem.

S. 2792 would substantialy strengthen the federal pesticide law in many regards. One of the most important provisions of this legislation would require EPA and the states to protect groundwater from pesticide contamination. This legislation deals with one specific source of groundwater contamination within the context of FIFRA. The current amendment is in no way intended to be the only authority for EPA under FIFRA or any other federal statute to address groundwater contamination by pesticides, nor is it meant to preclude further federal or state groundwater protection legislation. The purpose of the amendment is to establish a mandatory duty on EPA and the states to regulate pesticides detected in groundwater as a result of agricultural use and to prevent pesticide contamination from exceeding levels that cause human health concerns. The groundwater amendment contains four basic aspects to protect groundwater.

Notification and Monitoring

The amendment requires that a pesticide registrant notify EPA, within 15 working days, whenever a pesticide is detected in groundwater, on the basis of reliable analytical data. The

registrant is also required to notify within 15 working days the Governor of each state and owner of each property where the pesticide was detected. These notification requirements apply regardless of the amount of the pesticide detected in groundwater. Other Federal agencies, any state agencies, and members of the public are free to report pesticide detection data to EPA. However, the mandatory notification reguirement and reporting schedules applies only to pesiticide registrants in keeping with the general thrust of FIFRA. EPA may require the registrant to conduct groundwater monitoring in order to obtain information for developing the most appropriate regulatory response. The purpose of this language is to underscore EPA's ability to require groundwater monitoring data.

Groundwater Residue Guidance Levels (GRGL)

In order to create a binding standard for both EPA and the states to respond to pesticide contamination in groundwater, the amendment requires EPA to establish GRGLS in certain instances and gives the Agency discretionary authority to set GRGLs in other cases. For example, EPA must issue a GRGL when a pesticide is determined to have the potential to leach into groundwater, when a pesticide is detected in the groundwater in three different geographical areas or in a drinking water wellfield that serves a population of over 10,000 people, or when a Federal agency or Governor petitions EPA to set a GRGL. If a maximum contaminant level (MCL) for a pesticide has been established, the GRGL shall be set at that level. If no MCL exists, EPA shall consider the level of the pesticide in drinking water at which no

known or anticipated adverse effects on human health occur, the need for an adequate margin of safety, and the completeness and adequacy of data on the pesticide in determining the GRGL, either interim or final. EPA must issue an interim GRGL within 30 days of any requirement to establish a GRGL. EPA must allow 30 days for public comment before issuing a final GRGL. EPA must issue a final GRGL no later than three months after issuing an inerim GRGL. EPA can revise GRGLs but shall allow 30 days for public comment on the revision. Interim GRGLs and GRGLs established at the MCL are not subject to juidicial review under FIFRA.

Site Specific Response

In order to address the emergency problem that arises when a pesticide residue exceeds a GRGL in a drinking water well, the amendment provides for site specific response. Upon determining that a pesticide exceeds a GRGL in a drinking water well, EPA must notify the Governor of the affected state and provide all information relevant to the determination. Within 90 days of the notification from EPA, the Governor must act to bring and retain pesticide levels in the drinking water well at or below the GRGL, or to prevent consumption of the contaminated drinking water exceeding the GRGL. Unless it is not feasible to bring and retain the concentration of the pesticide at the well at or below the GRGL, the prohibition on consumption approach will not be the selected remedy. If, after January 1, 1989, a state fails to act, EPA must either issue an order prohibiting use of the pesticide in the vicinity of the drinking water well,

or take other site specific actions to bring and retain the concentration of the pesticide in the drinking water well at or below the GRGL.

Any person adversely affected by EPA's action or failure to act has an opportunity for an expedited hearing according to the procedures of FIFRA section 6(c)(2) to determine whether EPA has met the requirements of bringing and retaining the concentration of the pesticide in the drinking water well to or below the GRGL, or has prevented consumption of the contaminated water if it is not feasible to bring the level below the GRGL. Therefore, the sole issue at the hearing should be whether EPA's actions were adequate to bring the pesticide contamination level to or below the GRGL or prevent consumption of contaminated water. The hearing shall be completed and a determination reached within 75 days of the receipt of the request for a hearing. Although this section of the groundwater amendment provides EPA with crucial authority to respond to emergency pesticide contamination incidents, the majority of EPA's activities on pesticide detections are envisioned to occur as registration amendments to prevent pesticide levels from ever exceeding GRGLs.

Registration Amendments

As a preventive tool to keep pesticides from exceeding GRGLs in groundwater, EPA is required to amend pesticide registrations in a manner reasonably necessary to ensure that pesticide use will not cause the GRGL to be exceeded. EPA has a mandatory duty to amend a pesticide registration whenever a reasonable likelihood exists that the GRGL for a pesticide will be exceeded

at different localities. Similarly, EPA has a mandatory duty to determine whether there is reasonable likelihood that a GRGL for a pesticide will be exceeded. In reaching the reasonable likelihood determination, EPA must use the presumption that pesticides detected in amounts over 25 percent of the GRGL meet the reasonable likelihood standard. Thus, if the GRGL was 4 ppb and the pesticide was detected at 1 ppb, there would be a presumption that EPA must amend the registration. Regarldess of whether the groundwater is a current or potential source of drinking water, EPA shall issue registration amendments reasonably necessary to prevent the GRGL from being exceeded. In developing the amendment for potential drinking water, EPA shall take into account state information on land or groundwater use classification schemes and consider the views of the USDA, other appropriate federal agencies, and the Governors of the States. In general, the Governors of the States shall be notified of EPA's determination that a reasonable likelihood exists that the GRGL will be exceeded and the Governors shall provide relevant information to EPA and make recommendations regarding necessary registration amendments. Amendments to the registration may include limitations on the purposes, locations, application rates, or application methods of a pesticide, changes in the pesticide's classification, reguirements for training or certification of pesticide applicators, site specific responses, prohibitions on pesticide use, and any other requirement under FIFRA to ensure that the GRGL will not by exceeded.

The groundwater amendment also provides that EPA may collect

and make information concerning detection of pesticides in groundwater available to the public through an information file. In addition, EPA is required to provide technical assistance to the States by providing information on individual pesticides (toxicity, environmental fate, and other data), alternative pest control techniques, and other relevant subjects.

S. 2792, in large part, represents the compromise agreement resulting from over one and a half years of negotiations between the Campaign for Pesticide Reform (CPR), a coalition of 41 environmental, consumer, and labor organizations, and the National Agricultural Chemicals Association (NACA) and others representing pesticide manufacturers and users. Both NACA and CPR support S. 2792 as reported by the Senate Agriculture Committee if the amendment to preempt state tolerance setting is deleted and the language to protect the public from exposure to residues of banned pesticide in imported food is restored. In particular, the groundwater amendment is supported by EPA, and the National Governors' Association, as well as NACA and CPR. As with any compromise, a few members of our coalition would prefer certain changes in this provision; however, the coalition has decided to support the groundwater amendment.

Passage of S. 2792 would greatly strengthen EPA's regulation of pesticides. In addition to the groundwater provision, the legislation would require, on a specific timetable, full health and safety testing of all pesticides. The required tests include environmental fate data, or studies on the potential for pesticides to contaminate groundwater. The submission of this information will greatly enhance EPA's ability to prevent

pesticide contamination of groundwater. EPA would be required to review these data and reassess whether the registrations of pesticides should be renewed. Pesticide manufacturers will pay fees to partially finance the costs of EPA's review of the health and safety of inert ingredients in pesticide products.

Reform of the federal pesticide law is long overdue. The legislation now before Congress would break a stalemate for amending FIFRA. These amendments will improve protection of public health and the environment from pesticides. The groundwater provision establishes a mandatory duty for EPA to respond to pesticide contamination. This provision does not constrain EPA's authority under other sections of FIFRA, or any other federal law. There are issues that the ground- water amendment does not adddress, including clean up of contaminated groundwater. Although these issues are important, it is neither timely nor appropriate to resolve these issues as part of FIFRA. Attempting to address these problems in S. 2792 may only prevent its enactment. Instead, we urge you to support this legislation, including the groundwater provision, and to help ensure the passage of this landmark pesticide reform bill during the 99th Congress.

SEPTEMBER 8, 1986.

THE UNITED STATES CONGRESS,
Washington, DC.

DEAR MEMBERS OF CONGRESS: We support the compromise agreement between chemical companies, environmental, consumer, and labor organizations, and the American Farm Bureau to amend the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). The critical legislation (H.R. 2482/S. 2792) embodying this unprecedented agreement would substantially strengthen FIFRA and thereby provide greater protection of public health and the environment from pesticides.

Below are certain provisions of the agreement that must be enacted in law to improve federal regulation of pesticides.

1. EPA must require complete health and safety testing of pesticides on a specific timetable.

Approximately 2.7 billion pounds of pesticides are used annually in the United States. Yet, the current federal scheme for regulating these chemicals is fundamentally flawed by the absence of valid scientific data addressing their health and environmental hazards. In 1984, a National Academy of Sciences study concluded that pesticide manufacturers had provided adequate data to conduct complete health hazard assessments for only ten percent of the pesticides on the market.

2. Pesticides registered with false or invalid data must be removed from use.

In the late 1970s EPA and FDA uncovered invalid and fraudulent health and safety tests on pesticides conducted by Industrial Bio-Test (IBT) Laboratories. By 1983, as many as 200 pesticides were discovered to have been registered with some degree of reliance on IBT data and virtually all IBT data were found to be inadequate.

3. EPA must expeditiously cancel the use of pesticides known to cause health or environmental hazards.

Commonly it takes EPA three to seven years to reach final decisions about cancelling the uses of known hazardous pesticides. With EDB, the Agency first received positive evidence of carcinogenicity in 1974; ten years later EPA curtailed most uses of the chemical.

4. "Inert" ingredients in pesticide products must be tested and regulated on a specific schedule.

Pesticide products contain both active and inert ingredients. Though not effective against pests, inert ingredients can have adverse health effects. Last year EPA identified 55 inerts of known toxicological significance, including methylene chloride, formaldehyde, and benzene. For 800 additional inerts, the Agency has no toxicity information.

5. EPA must protect groundwater by imposing registration amendments or site-specific responses to prevent pesticide contamination.

Seventeen different pesticides have been found in the groundwater of 23 states as a result of agricultural use. A California study reported 57 pesticides in 28 counties' groundwater. Approximately one-half the nation's population relies on groundwater for drinking water.

6. Regulations to protect and train workers in the safe handling of pesticides must be established.

California and other farm states have a higher rate of work-related illness for farmworkers than any other group in the industry. California law requires that doctors report any pesticide-related illness; yet only one percent of pesticide poisonings in farm workers are estimated to be reported. The federal government has failed to protect farmworkers. For example, the longest federal reentry interval (time that must elapse between pesticide application and worker reentry into the treated area) is 48 hours; the longest California reentry interval is 60 days.

7. The public should be granted access to health and safety data prior to EPA's registration decisions in order to comment effectively.

Currently the public only has access to health and safety data 30 days after EPA decides to register a pesticide. Although allowed to comment on the Agency's decision to register a pesticide, the public cannot provide effective comments without reviewing the health and safety data. These data, submitted by pesticide manufacturers, are the primary information EPA considers in reaching its registration decision.

The unique coalition supporting this legislation demonstrates that reform of the nation's pesticide law is long overdue. We urge you to support this compromise

agreement as contained in S. 2792 and H.R. 2482, and to oppose any weakening amendments offered to this legislation.

Sincerely,

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STATEMENT OF
DR. JACK D. EARLY
PRESIDENT
NATIONAL AGRICULTURAL CHEMICALS ASSOCIATION
BEFORE THE
SUBCOMMITTEE ON TOXIC SUBSTANCES AND ENVIRONMENTAL OVERSIGHT
SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

September 9, 1986

Mr. Chairman and members of the Subcommittee, it is a pleasure to appear before you this morning to discuss proposed amendments to the Federal Insecticide, Fungicide, and Rodenticide Act on agricultural chemicals and groundwater. My name is Jack D. Early and I am President of the National Agricultural Chemicals Association.

NACA is a nonprofit industry association of approximately 90 agricultural chemical manufacturers and formulators. NACA's member companies supply virtually all of the $4 billion U.S. agricultural pesticide market.

With me today are Dr. Loy Newby, Director-Public Affairs, Agricultural Division of CIBA-GEIGY Corporation, and Mr. Scott Ferguson, NACA Vice President-General Counsel.

Earlier this year, Mr. Chairman, NACA wrote you regarding your series of hearings on groundwater protection. We expressed our commitment to work with you and the Subcommittee to address issues associated with agricultural chemicals and groundwater protection. We wish to renew that commitment. We are pleased to report that since that letter our Industry and the Campaign for Pesticide Reform (CPR), a coalition of over 40

environmental, consumer and labor organizations, have reached agreement on important changes to the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) regarding pesticides in groundwater. As you may be aware, our agreement with CPR on groundwater and other important changes to FIFRA is reflected in amendments pending before both the House and Senate. We are hopeful that these amendments will be enacted into law this year.

The process of reaching agreement on FIFRA amendments addressing pesticides in groundwater has been difficult. Discussions between negotiators for our Industry and the environmental coalition began over one year ago and both sides have made important concessions. Our Industry's initial position was that FIFRA provided adequate authority to deal with groundwater issues and that the proposals made by the environmental coalition were overreaching and unreasonable. After many hours of difficult negotiations, our Industry came to recognize that major changes to FIFRA dealing with this subject may be needed, in many respects similar to what the environmental coalition initially proposed. Similarly, the negotiation efforts lead by Senator Paula Hawkins to achieve a compromise supported by the Senate Committee on Agriculture resulted in further concessions, but a stronger amendment because of its broadened support.

The result of these negotiations is a tough but fair compromise. It is important to recognize that this spirit of compromise has been embraced by the House of Representatives as well. We understand that the House Committee on Agriculture will be following closely the outlines of the

Senate groundwater language in developing a Committee amendment for the House floor.

These groundwater amendments are now an integral part of a package of FIFRA amendments in which concessions made during the negotiations on groundwater were taken into consideration in concessions made elsewhere in the amendment package. Significant changes to the groundwater amendments would thus adversely affect both support for the groundwater amendments and the overall package of FIFRA amendments.

I would like to turn now briefly to a discussion of the amendments. The amendments are designed to fit into and extend the current FIFRA approach in regulating pesticides. The groundwater proposal does not deal with liability, remedial action with respect to pesticides in groundwater, or how state groundwater protection programs should address pesticides. These are subjects that are not currently within the scope of FIFRA. Nor does it attempt to amend or affect other Federal laws. The proposal adopts instead the view, which you, Mr. Chairman, have expressed, that the Federal government should get potential sources of contamination of groundwater under control—in this case pesticides—and to take preventative action before problems occur. The other issues mentioned, not addressed in the proposed FIFRA amendments, are important and we have an open mind on the need for further legislation at a later date—in FIFRA or elsewhere—on those subjects.

These amendments on groundwater contain a number of important concepts. I would like to highlight just a few of these:

- Our Industry agrees that groundwater protection is of such importance that explicit guidance should be provided in FIFRA on regulating pesticides with respect to groundwater. FIFRA now implicitly addresses the subject and EPA is currently acting under the statute to regulate pesticides in groundwater.
- The focus of the amendments is on prevention of groundwater contamination by pesticides and requires action to amend labels and modify registrations before levels of pesticides in groundwater reach levels of concern.
- The amendments are comprehensive in scope, requiring notice by registrants, EPA investigation and regulatory follow-up on pesticide contamination of groundwater, regardless of the nature and the use of the groundwater affected.
- The amendments reflect the important partnership role of the Federal and State governments and the regulatory functions within those levels of government.
- Finally, the amendments reflect the commitment that drinking water supplies must be protected, even to the extent of stopping continued use of agricultural chemicals in affected areas even when such use would be beneficial to food and fibre production.

As you may recognize from this brief description, the groundwater amendments to FIFRA are an important legislative opportunity. It will

indeed be unfortunate if this opportunity is missed and we lose the benefits, not only of addressing pesticides in groundwater at this time, but also the many other concerns that have also been addressed in companion amendments to FIFRA.

In closing, I want to again thank you, Mr. Chairman, and this Subcommittee for allowing us to speak to you on these important proposed groundwater amendments to FIFRA. We stand ready to answer any questions you may have on this or other amendments to FIFRA.

ENVIRONMENTAL POLICY INSTITUTE

Testimony of
Velma M. Smith
on behalf of the
Environmental Policy Institute

before the

Subcommittee on Toxic Substances and Environmental Oversight

Committee on Environment and Public Works

September 9, 1986

218 D Street, S.E., Washington, D.C. 20003 (202) 544-2600

Mr. Chairman, members of the Committe, my name is Velma Smith. I am Director of the Environmental Policy Institute's Groundwater Protection Project, and I am happy to have this opportunity to present testimony on behalf of the Environmental Policy Institute.

On behalf of our organization , I would like to thank the Chairman for his initiative in calling this important hearing.

First, I would like to commend those agriculture, chemical industry and public interest organizations that have worked for many months to reach consensus on proposed amendments to the Federal Insecticide, Fungicide and Rodenticide Act. While we applaud their efforts, as well as those of the members of the Senate Agriculture Committee, we remain greatly troubled by the section of the bill dealing with pesticide contamination of groundwater.

The proposed amendment dealing with pesticides in groundwater is, in our view, flawed in several important respects. We are hopeful that this Committee, which has shown a strong interest in the issues of groundwater protection and has devoted considerable effort to reviewing a variety of groundwater problems and possible solutions, will act to correct these defects. Clearly, reasonable changes can be made which will accommodate

various interests and still offer a worthwhile initiative to protect the nation's groundwater resources.

The Environmental Policy Institute believes that changes to the amendment are essential, if this Committee and indeed the entire Congress hopes to seriously and effectively address the contamination of groundwater by pesticides.

We feel strongly that passage of the amendment as drafted would not only fall short of what needs to be done to protect human health but also signal a retreat from the Congressional commitment to groundwater protection initiated with passage of the Safe Drinking Water Act earlier this year.

As members of the Committee know, the groundwater section, as written, establishes an obligation on the part of pesticide registrants to share with EPA certain data on groundwater contamination. It requires the EPA to review data submitted to it on pesticide detections, and it authorizes and, in certain instances, compels the Administrator to establish groundwater standards for pesticides. The bill directs -- if somewhat timidly -- the states to respond to drinking water well contamination by pesticides, and it requires the Administrator to pursue registration amendments to limit groundwater contamination once certain findings are made.

On its face, all of the above sounds positive. On closer scrutiny, however, we find that the bill actually encourages EPA to act in a crisis-response rather than problem prevention mode. It appears to sanction the contamination of future drinking water sources beyond established human health effects levels, and it fails to clarify crucial questions regarding EPA's authority to impose monitoring requirements on pesticide registrants.

Thus, while this section purports to protect underground drinking water supplies, we believe that it merely provides a prescribed mechanism for response to groundwater problems. The bill does, in fact, establish new mandatory duties for the Administrator, but we believe that the assurance we might derive from those mandates comes at an unacceptably high cost -- a cost that will be paid by water users of today and of the future.

As representatives of the Natural Resources Defense Council have pointed out, the Campaign for Pesticide Reform remains committed to the overall agreement with the chemical industry on pesticide reform and the passage of a new pesticide law. Nonetheless, it may be important for Members of this Committee to note that groundwater was among the most contentious areas negotiated and that the "agreement" on groundwater was nearly the last to be hammered out. Indeed, the hammering has continued on the House side and in the Agriculture Committee.

Thus, there has been great pressure on environmental interests to accept the proposal for the sake of the entire package despite serious reservations about many aspects of the groundwater approach. We agree that passage of the overall Reauthorization Bill is needed, but we also believe that the groundwater issue is too important and too pressing to be given less than full discussion of the significant points of contention underlying this amendment.

The comments that follow, then, cover the major subsections of the amendment and address substantive and procedural problems that we consider significant.

NOTIFICATION

The notification section of the bill is relatively straight-forward and, in fact, greatly improved from an early draft considered in the House Agriculture Committee. The earlier draft obligated the registrant only to provide data on detections over certain concentrations, while this draft recognizes EPA's need for an enhanced database on all pesticide detections and thereby obligates the registrants to share detection data regardless of the level of detection. That is a welcome and needed change, but there may be another change to this section which the Committee may wish to consider.

We have some concern that the pesticide registrant

and the EPA may differ in their interpretations of what is considered reliable data, and we fear that differences in interpretation might result in the withholding of useful data from EPA.

Pesticide registrants are understandably concerned about creating undue alarm over false detections and, therefore, have pressed for the use of the term "reliable analytical data." We agree that any EPA regulatory action should be based on reliable data, and we would point out that EPA is instructed throughout the section to take action based on reliable analytical data. However, we are not convinced that notification should be restricted to data which the registrant considers reliable, even given the defintion of reliable data contained in the bill.

We would argue that all information on detections which comes into the possession or knowledge of the registrant should be reported to EPA. EPA should then be obligated to review such data -- as well as data submitted by parties other than the registrant -- to determine reliability and the need for further action.

MONITORING

The section on monitoring has been the subject of some lengthy and rather heated debate, and we would suggest that Committee members compare this section as written with a working draft developed by EPA for purposes of discussion in the House Agriculture Committee.

This section appears to mimic rather than expand existing statutory authority, in that it authorizes the Administrator to require monitoring if he determines that such data are "required to maintain in effect an existing registration." This language, unfortunately, is apparently subject to considerably different interpretations.

It is our understanding that EPA's interpretation of this wording would be that the Agency could, in addition to requiring a program of national representiative monitoring, also require confirmation testing at single wells or within a given area to determine the extent of contamination.

The National Agricultural Chemical Association apparently feels otherwise, but EPA has never pressed this authority, and thus we have no indication of how a court would interpret the language on "maintaining an existing pesticide registration." In addition, we would note that under the section as drafted, EPA could decide that monitoring was necessary but still fail to require it.

We believe that if Congress is indeed serious about a Federal program to either respond to or prevent pesticide contamination of groundwater, it must clarify these monitoring authorities and provide for imposition of monitoring costs on the responsible party.

The chemical industry has in previous discussions objected to additional monitoring requirments on the grounds that such monitoring is costly. While we disagree with their objection, we fully agree with their point on costs, and that is why we seek some clarification.

If EPA is to be expected to fully review pesticide detection data and if the states or EPA is expected to develop effective responses to contamination, government entities will clearly be required, at least on occasion, to run confirmation tests and to do intensive area-wide monitoring to determine the extent and movement of groundwater contamination.

Those efforts will be expensive, and certainly no member of Congress needs to be reminded that Federal resources to pay for this monitoring will be limited. But the fact of limited Federal and state resources does not diminish the need for testing. If government entities, and thereby the general taxpayer, cannot be expected to pay the full cost of monitoring, that leaves three other possible funding sources -- the water user or purveyor, the farmer or applicator or the registrant.

We are not convinced that the imposition of monitoring costs on water users and purveyors -- beyond those costs that will be borne by public water systems for testing in compliance with the Safe Drinking Water Act -- is either reasonable or fair. Nor are we convinced that

farmers or other pesticide applicators who faithfully follow label instructions should be required to pay for monitoring when those instructions fail to protect groundwater.

Thus, we believe that additional monitoring costs should fall on the pesticide registrant, and we urge the Committee to provide a specific authorization for EPA to impose such requirements.

GROUNDWATER RESIDUE GUIDANCE LEVELS

Under the Agriculture Committee bill, action levels called groundwater residue guidance levels are set which drive all aspects of EPA's response to pesticide contamination. Under the proposal, these guidance levels will equal the Safe Drinking Water Act's Maximum Contaminant Levels, whenever such levels have been established.

This Committee worked diligently for several years on the Reauthorization of the Safe Drinking Water Act, and Members no doubt understand well the two-pronged standard-setting approach under the Act.

Maximum contaminant levels, as you know, do not necessarily represent a concentration of a pollutant which would be considered non-threatening to human health. Rather, the maximum contaminant level represents the best that we can expect our public water utilities to do, in

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terms of water treatment, considering the cost of cleanup technologies available at a given point in time. Over time, as economics and technologies improve, the maximum contaminant levels are to be tightened to provide for greater health protection.

A compromise between health considerations and cleanup cost considerations may be necessary within the framework of drinking water regulation, simply to assure that people have access to water supplies. Such a compromise is totally out of place, however, in a program designed to prevent pollution.

When the maximum contaminant levels are used in pollution control programs, the water supply industry, in essence, assumes the entire responsibility for costly monitoring and for removal of contamination resulting from other sectors of society. Such an approach to pollution control is in direct conflict with the widely accepted notion of "Polluter Pays," and we are convinced that a program such as this one which utilizes the MCLs for pollution prevention will have costly repercussions for water users throughout the country.

This standard-setting problem is compounded in the proposed legislation, because the drafters have chosen to use exceedance of the standard as the trigger for certain actions by EPA or by the states. The program, then, assures that an affected public water utility actually

violates standards under the Safe Drinking Water Act before mitigation measures will be taken. If the intended purpose of this new section is an early warning system for responding to pesticide contamination, then the alarm is set to ring too late to offer any hope of escape.

Proponents of the Agriculture Committee proposal have argued that these numbers were selected in part to ease the burden on the Agency, providing for promulation of a single standard to serve several purposes. We agree that the burdens on EPA are considerable, but we are not convinced that inadequate standards can be justified for that or any other reason.

Actually, if Safe Drinking Water Act standards are to be used, there are other options, also protective of EPA resources, which could serve to protect groundwater much more effectively. The Maximum Contaminant Level Goals, which more closely reflect ideal health-based concentrations, could be utilized directly. Use of those numbers would not necessarily provide adequate opportunity for mitigation prior to unacceptable levels of contamination, but it would be an improvement over the current amendment.

Preferable to that option, however, would be an approach which is truly prevention-oriented, modeled perhaps after the groundwater protection program developed in the State of Wisconsin. We would urge the adoption of

preventive action limits, set by statute at a given percentage of the drinking water standards. A more aggressive monitoring program coupled with the use of such standards as action levels would allow for response and mitigation before drinking water supplies are contaminated to a point which actually endangers human health.

Surely, if Congress is going to take a new initiative on pesticides in groundwater, it is in everyone's best interest to assure that it is an approach which prevents problems and avoids the costly and difficult questions of groundwater cleanup.

Other concerns we have with this very important section of the amendment involve the use of the EPA Health Advisory Levels -- which do not, to our knowledge, incorporate cancer risks into the number selection procedure; the failure of the interim groundwater residue guidance levels to trigger regulatory actions; the lack of a method for dealing with risks associated with multiple-chemical exposures; the lack of specific reference to other dietary exposures to pesticides; and the possibility that pesticide residue levels set in the absence of drinking water standards may offer less public health protection than would be required under the Safe Drinking Water Act.

SITE-SPECIFIC RESPONSE

As the title implies, this section addresses EPA's response to contamination on a site-specific basis. It covers only those instances in which pesticide contamination has reached a drinking water well and the Administrator determines that the presence of the pesticde may be the result of legal pesticide usage. Further, the section becomes operative only after levels of safety have been exceeded.

The major problem we see with this section is simply that it offers far too little, far too late. At the point at which drinking water standards have been exceeded in a well, property has been damaged -- perhaps irreparably. For many people, this sort of loss goes well beyond inconvience: When a family's water supply is damaged and the closest alternative water line is beyond reasonable reach, that family may have to choose between a long-term health threat or complete loss of home and property.

A response program which is triggered at this crisis stage should, in our view, speak not only to improved pesticide application practices, but also to issues of well replacement, water treatment and damage compensation. In addition, such a program should function as a true emergency response, with immediate notification to the water user and immediate assistance in securing alternative water supplies. This amendment, however, is

silent on those points and leaves open to the states the totally unacceptable and frankly inhumane option of merely condemning a well. Hardly a solution for the injured water user.

In another section of the FIFRA legislation, the Agriculture Committee has adopted language which states that the pesticide user who is diligent in adhering to label instructions will be presumed not liable under Federal law for damages to groundwater. We understand the concern of the farm community with threats of lawsuits, and we appreciate the Committee's intention to protect the farmer who in good faith buys and uses in prescribed fashion a registered pesticide product.

However, we believe the Committee's action in that section of the bill combined with this timid and clearly inadequate site-specific response section may inadvertantly shift the burdens associated with groundwater pollution from one innocent party to another. It appears that the Agriculture Committee in its attempt to protect the responsible pesticide user has merely shifted the cost of water replacement and treatment onto the water user himself. That shift cannot be viewed as a solution.

Also in this section, the drafters have established something of a procedural oddity. Once the Governor of a State has been notified of the exceedance of a groundwater

residue guidance level, he or she is directed to take action within 90 days. If the Governor fails to take action, however, EPA is not authorized to step in until January 1989. Potentially, then we have period of over two years during which EPA could be restricted from taking action to protect the health of groundwater users.

Given these problems with the section, we would urge consideration of significant changes to this response program. Among the changes we would support would be (1)the triggering of a mitigation response prior to exceedance of a standard; (2) clear assignment of liablity to the registrant in cases in which standards are exceeded and the pesticide appears to have been used legally; (3) immediate notification of well owners and water users when pesticides are detected in a drinking water well at concentrations approaching the standard; (4) deletion of the language which allows the Governor of a state to respond simply by condemning a well; and (5) clear authority for EPA to act to abate the pollution sources, effective upon enactment -- not two years after enactment.

REGISTRATION AMENDMENTS

This section of the amendment is, in our view, crucial to any effort to move EPA into a preventive mode on groundwater protection. An innovative and aggressive use of regsitration amendment authority may hold the greatest potential for bringing about a new generation of

pesticides and pesticide use practices compatible with a national goal of groundwater protection.

Perhaps only increased liability pressures on the registrants will have a more direct influence on the development of pest control products and accompanying best management products that lessen the pesticide residues reaching groundwater.

However, the current amendment language seems designed to limit rather than encourage Agency action in this area. We believe it does so in several ways.

First, the Administrator is directed to initiate registration amendments to protect currently used water supplies not when he determines that pesticide residues are entering drinking water aquifers, not even when he finds they are present in the particular zones of influence of individual water wells. Instead, the Administrator is required to pursue registration amendments only when he finds that there is a "reasonable likelihood" that the groundwater residue guidance levels will be exceeded IN wells in several locations.

Thus, Congress appears to rein in the Agency, directing EPA to use a potentially effective groundwater protection tool -- and indeed the backbone of the FIFRA regulatory scheme -- only after it finds compelling evidence that pesticide concentrations will reach unhealthful levels.

It seems rather ironic to us that the same members of Congress who only months ago voted for a program to encourage state action to protect drinking water wells might now vote for legislation that could be read as discouraging preventive action by EPA.

The Agriculture Committee amendment also includes a similar but separate subsection dealing with a rather vaguely defined subset of groundwaters termed potential drinking water. But in acting to protect those groundwaters, EPA must consider when the water is likely to be used for human consumption. EPA is also directed to consider any groundwater classification established by the states.

The implication which concerns us here is that contamination of potential drinking water supplies beyond limits of human safety may be allowed or even sanctioned, either where "experts" fail to predict future needs or where states by fiat simply declare usable groundwater resources unusable.

Mr. Chairman, we believe that to the extent this amendment makes a distinction betwen currently used and potentially used water sources and to the extent it focuses on contamination within wells rather than within aquifer flow systems, it sets unwise and unworkable precedents for groundwater protection policy.

This short-sighted notion that contamination of groundwater is of little consequence until or unless it intersects a point of human exposure conflicts with national resource protection goals in other areas and finds its basis in several questionable assumptions.

Such a notion presumes an ability to predict reliably many generations' future water needs. It presumes an ability to track -- with a high degree of accuracy -- the movement of contaminants through an aquifer, and it presumes an ability to control groundwater withdrawals in other wells that might affect the movement of the contaminant plume. It also presumes that there is not an interconnection of groundwaters with streams, rivers or wetlands; groundwater becomes somehow distinct from nature's hydrologic cycle.

All of these presumptions are optimistic at best and cannot be viewed as the basis of an effective groundwater protection policy.

While it may make sense to differentiate between currently used sources of drinking water and potentially used drinking water when it comes to questions of remediation or cleanup, it is not appropriate, in our view, to differentiate between the two for purposes of preventing further contamination. The comments of the American Water Works Association on another issue of

groundwater protection -- unrelated to agricultural chemicals -- are nonetheless pertinent to this point:

> Realistically, the protection of groundwater may not be for the protection of the population today. In some cases, we are currently drinking and using the groundwaters whose quality is a function of society's past practices. The goal of groundwater protection strategies must be for the future. We must look at today's actions in terms of their impact tomorrow.
>
> Current water use patterns should certainly be addressed in groundwater protection strategies, but regulatory actions should not bias future water water use patterns by allowing relaxed standards to be implemented in other areas.

We are concerned that the Agriculture Committee's subsection on registration amendments allows for just this kind of relaxation, and we urge this Committee to press for corrective amendments. We believe that the section can be amended easily, simply creating one requirement for EPA to initiate registration amendments to protect underground sources of drinking water. We believe that a definition of underground sources of drinking water should be based on the Safe Drinking Water Act definition, and we would be glad to suggest specific language.

Finally, we offer one other general suggestion for your review of this amendment: Throughout the section, there are points at which various parties are notified of pesticide detections or proposed actions by the Administrator. In most instances, the water user appears to be last on the heirarchy in terms of the immediacy of notification or the level of effort required to make an effective communication. This Commitee acted to protect the rights of water users under the Safe Drinking Water Act, and we ask that you make a similar effort under this statute as well.

Mr. Chairman, we have identified a number of serious defects with the groundwater proposal as drafted. We also know that time is becoming a crucial factor in this Reuthorization debate.

We agree that Congressional action to address the contamination of groundwater by pesticides would be preferable now rather than in the next session of Congress. But that is so only if the Congressional action promises to move us forward toward a more effective program of protecting groundwater. We are not convinced that the bill as drafted really does that.

Therefore, we would suggest that if this Committee cannot, in the short time-frame available, correct these serious problems, then the issue of pesticides in groundwater be set aside from the remainder of the FIFRA

Reauthorization and brought up for reconsideration early next year and within the context of a broader groundwater protection initiative.

Again, we thank this Committee for its strong interest in and commitment to groundwater protection, and we appreciate the opportunity to testify today. I would be happy to answer any questions that the Members of the Committee might have.

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TESTIMONY OF

THE ASSOCIATION OF STATE DRINKING WATER ADMINISTRATORS

BEFORE THE SUBCOMMITTEE ON TOXIC SUBSTANCES

AND ENVIRONMENTAL OVERSIGHT

OF THE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

UNITED STATES SENATE

SEPTEMBER 9, 1986

PROPOSED GROUNDWATER PROTECTION PROVISIONS OF THE

FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT.

I) INTRODUCTION

The Association of State Drinking Water Administrators (ASDWA) greatly appreciates the opportunity to present this testimony to the Subcommittee. ASDWA was conceived and founded in 1984 by members of the old "State Liaison Group," an EPA advisory group made up of state drinking water program managers from each of the ten federal regions. ASDWA was formed to meet the communication and coordination needs of state program administrators. ASDWA's eligible membership is comprised of the water supply program managers in the 57 states and territories. The primary purpose of the Association is to provide state primacy agents a collective voice on issues related to the protection of public health through the assurance of safe drinking water.

In 54 of the 57 states and territories, state drinking water programs bear primary responsibility for monitoring and enforcement activities involved in the implementation of the Safe Drinking Water Act. Under this delegated authority, the state primacy agencies oversee the protection of all public drinking water supplies from contamination, including that attributable to pesticide use. Within this context, ASDWA offers the following comments on the proposed groundwater protection provisions now under consideration by the Senate in the reauthorization of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). ASDWA presents this testimony on behalf of our member states; it reflects the consensus of the organization.

ASDWA commends the Subcommittee on its efforts to ensure that any amendments to S. 2792 intended to protect groundwater supplies against pesticide contamination will achieve this goal in the most effective, efficient, and equitable manner possible. We agree that specific statutory authority to enhance regulatory agencies' abilities to mitigate the potential for pesticide contamination of groundwater supplies is desireable, and the Congress should be commended for taking this initiative.

However, we have serious concerns regarding the language in the various drafts of the groundwater protection provisions which have previously been proposed and in amendments recently offered by Senator Hawkins to the Agriculture Committee which apparently seek to address this issue. Specifically, we question whether the language under consideration will actually provide a preventive mechanism for the protection of groundwater, as is presumably the intent, and secondly, whether it will burden regulatory agencies and public water supply systems with an inequitable share of the costs associated with detection, confirmation, monitoring and mitigation of contamination problems resulting from pesticide use.

II) COVERAGE AND SCOPE OF PROPOSED AMENDMENTS

The bill should make clear its intent to protect both current and potential sources of drinking water. Current sources of drinking water should include the aquifer or aquifer system supplying the "drinking water well." Response mechanisms should not be restricted to the presence of pesticides in "the drinking water well" but should be expanded to include presence of pesticides in current or potential sources. The provisions of this bill should also be more explicitly tied to the wellhead protection provisions of Section 1428 of the Safe Drinking Water Act Amendments (SDWA), possibly by recognizing a wellhead protection zone (once designated by the state) as the zone of protection for current sources under the new FIFRA language.

III) NOTIFICATION REQUIREMENTS

Under the bill, initiation of the groundwater protection process ultimately hinges on detection and confirmation of the presence of the pesticide or pesticide residue. Section 32 of the proposed amendments appears to recognize this; however, we feel it is necessary to clarify whether reliable and positive analytical results from any source will satisfy this requirement,

or, if "the registrant" must supply EPA with these data before any action can be initiated, as the language seems to imply. As few if any registrants or pesticide manufacturers are now involved in comprehensive groundwater monitoring programs throughout the country, it would appear that water utilities and state drinking water programs will, in fact, be the primary sources of data for this crucial portion of the process.

Even though public water systems will be required to monitor for a number of regulated and unregulated synthetic organic chemicals under the SDWA and EPA regulations, the financial burden of repeat monitoring which will be required when contamination is detected will be considerable, particularly for small systems. When such contamination involves pesticides, we believe there should be a mechanism to provide an equitable distribution of costs for confirmation and continued monitoring.

It is our understanding that the provisions in Section 32 (c), which give EPA the authority to require pesticide registrants to conduct groundwater monitoring, are essentially a restatement of existing law. Requirements for monitoring programs of broader scope should be instituted when necessary. If applied more widely, these requirements may provide a workable mechanism for an equitable sharing of costs as alluded to above. For private wells, very small community water systems (CWS), and non-community water systems (NCWS), direct, "area-wide" monitoring programs carried out by the registrant may be acceptable for substances of local and regional concern. To offset costs to utilities and state primacy agencies for monitoring larger CWS however, the authority for states to formulate alternative funding schemes may need to be established. Such alternatives could include excise taxes on the manufacture and distribution of pesticides, or increased state fees for pesticide registration. Several states, including Vermont and Wisconsin, already have such funding mechanisms in place to help defray monitoring costs.

IV) DESIGNATION OF ACTION LEVELS

The proposed amendments specify that a substance's Maximum Contaminant Level (MCL), if promulgated under the SDWA, is to be used as the basis to trigger mitigative site-specific responses by EPA (through state primacy agents). ASDWA strongly disagrees with this approach. We believe that by using MCLs as action levels, degredation of the aquifer is virtually assured, and any "early warning" or preventive value envisioned for this requirement would be lost. As has been clearly documented, the recovery of contaminated aquifers is in most cases a very long term process, frequently taking many years.

ASDWA believes that groundwater protection programs must be proactive for maximum efficiency and effectiveness with regard to public health protection. To ensure such a proactive posture with regard to the FIFRA provisions, it is our recommendation that action levels be set low enough so that mitigative actions will avert violation of the MCL. Instead of the MCL, we recommend one of the following alternatives for action levels. A percentage of the MCL could be used, based on the severity of the health effects attributable to exposure to the pesticide. Alternatively, the use of Maximum Contaminant Level Goals (MCLG) (the health based "goals" for standards developed under the SDWA) for this purpose would provide reasonable protection from significant contamination. In the case of carcinogenic substances, for which the MCLGs are typically zero, or substances for which the MCLG is below the detection limit, the action level should be set at the limit of detection.

To date, MCLs have been promulgated for only six pesticides under SDWA, although new or revised standards for at least 21 pesticides are to be promulgated by EPA before June 19, 1989. While the bill apparently recognizes the need for alternative action levels by recommending the use of (presumably long-term) Health Advisory levels, we feel a much more conservative approach

is justifiable to assure a reasonable level of public health protection. Since EPA Health Advisories are developed only from data related to non-carcinogenic endpoints of toxicity, exposure to carcinogenic substances at these levels may significantly increase cancer risks, even over the short term. For example, EPA has calculated that a concentration of 0.0265 ug/l of lindane in drinking water could result in a 10^{-6} lifetime cancer risk. However, the adult "longer-term" Health Advisory for exposure to lindane in drinking water is 120 ug/l, over **4500 times** the 10^{-6} lifetime cancer risk level! ASDWA believes that it is not sufficiently protective of public health to wait until contamination at the Heal Advisory level is documented before EPA has the statutory authority to respond.

We further disagree with the proposal that the detection limit be used as the action level only in the absence of "all" health effects data. We advocate a more cautious and conservative policy. We recommend that until it can be established otherwise, the presence of any pesticide in an underground source of drinking water be regarded as a potential public health threat. If crucial health effects data are lacking on a substance, the groundwater action level should be the limit of detection until an MCLG is established for the substance.

Finally, the Hawkins amendment outlines specific procedures by which action levels are to be formally promulgated by EPA. Interim levels are to be issued first, followed by a 30 day public comment period. "Within three months" of issuing the interim level, a final action level is to be issued. This final level, if not based on the MCL, will then be subject to Judicial Review. Finally, the EPA would not be permitted to respond unless the "final" action level was exceeded (i.e., until all administrative rulemaking and Judicial Review actions are resolved). Notwithstanding our concerns about using MCLs as action levels, it is clear that such a prolonged standard setting process will allow contamination problems to continue unabated

for long periods of time. We believe the amendments should be revised to provide an expedited process for establishing interim action levels, and a mechanism to allow EPA response authority based on these interim levels. While we agree that opportunities for Judicial and Administrative challenge to the EPA action should be available, we strongly believe that they should not compromise regulatory agencies' abilities to take action to protect the public health first.

V) AUTHORITY FOR REGULATORY RESPONSE TO CONTAMINATION

The proposed amendments appear to be highly restrictive in specifying when a mitigative response to a groundwater contamination problem could commence. Further, as alluded to above they would appear to be reactive rather than preventive in nature. ASDWA strongly disagrees with this approach, and feels that it should be stated explicitly that any regulatory authority contained in the amendments in no way limits, but adds to EPA's existing powers. We believe the existing language contradicts the stated goal of "protection" of underground sources of drinking water by making it difficult for EPA to respond to contamination problems in a timely and effective manner.

Given that alternative action levels which allow prevention of significant degredation of drinking water sources can be established, the next step in ensuring protection against contamination of groundwater is to establish appropriate response authority for regulatory agencies. If the intent of the proposed FIFRA groundwater provisions is to enhance and expand EPA's ability to respond to potential groundwater contamination problems due to pesticide use, ASDWA believes the language should be changed substantially.

a) When the Administrator shall Undertake Response Actions

The proposed amendments appear to restrict the Administrator's response authority to very narrow circumstances. Only

after there is confirmed contamination above the "final" action level in a "drinking water well," and it is "determined" that the contamination resulted from the "...use of the pesticide in accordance with the labeling," can a response action be initiated.

There are several aspects of these provisions which the Association finds extremely troubling. First, as stated above, exceedence of either an interim or final action level should be grounds for response. Second, we fail to understand why violation of the action level must be documented at wells currently providing drinking water in order for response actions to commence. We believe both current and potential sources of drinking water should be afforded the same levels of protection from pesticide contamination. And, as stated above, reliable analytical results from any valid sampling point within underground sources of drinking water should be sufficient for this purpose. Finally, it is difficult to imagine how the EPA would be able to "determine" that contamination resulted only from use in accordance with labeling specifications, even if they had the resources to undertake such detailed site-by-site evaluations. Perhaps a preferable approach would be to assume applicators are abiding by label directions and that registration amendments are called for when groundwater contamination is documented.

b) Site Specific Regulatory Response Actions

If the conditions described above for regulatory response actions are met, the EPA must notify the governor of the state of its various determinations. The state then has 90 days to "take appropriate action" to reduce the contamination below the action level, or "to prevent consumption of drinking water [so contaminated]." Both of these responses are impractical especially within the established time frames and given resources available to the states. More importantly, the latter response does nothing correct the groundwater contamination problem. In the

event the state does not take action, the EPA is authorized to intervene, but not until after January 1, 1989! At that time, EPA has the authority to prohibit the use of the pesticide "in [the] vicinity" of the contaminated well. This prohibition, however, will not take effect until a notice of the proposed action is published in the Federal Register, "appropriate steps" are taken to inform all "potentially affected persons," and these persons have the opportunity for an administrative hearing to challenge the EPA's proposed action. Finally, the amendments explicitly direct EPA to establish expedient procedures to terminate the use prohibition when the pesticide contamination of the well is reduced below the action level.

The language appears to go to great lengths to assure that the use of "innocent" pesticides is not erroneously restricted. ASDWA believes this is opposite of the goal of public health protection. Under this approach, the persons most adversely affected will most likely be those using the contaminated groundwater. The concept of "preventing groundwater contamination" should embody a policy which always takes the conservative approach and "errs on the side of caution" with regard to public health. We believe that when pesticide contamination is detected in a source of drinking water, and the EPA determines that a pesticide use prohibition is the appropriate response, that action should be enforced immediately and until it can be proven in the administrative hearings by the "adversely affected persons" that another response would be more appropriate.

While prohibition of pesticide use or other site specific action may be short term responses to urgent situations, groundwater contamination by the pesticide may be an indication for a need for amendments to labeling specifications or a permanent ban. Senator Hawkins' FIFRA amendments, however, again seem to restrict the EPA's discretion as to when such registration amendments are warranted. The Administrator must somehow "determine" that there is "a reasonable likelihood" that final action

levels will be exceeded "in drinking water wells in different localities." Finally, when registration amendments are enacted they can be only what is "reasonably" necessary to ensure that the action levels will not be exceeded in drinking water wells. The goal of such amendments should instead be clearly stated as one of not only mitigating the problems already documented, but of ensuring that all current and potential underground sources of drinking water are protected against contamination by the pesticide.

While we agree that amending pesticide registration requirements must necessarily be a longer and more detailed process than initiating short-term response actions, we strongly advocate maximum flexibility for state and federal regulatory agencies in deciding if and when such amendments are called for. Additionally, we want to assure that the amendments explicitly allow for states to set more stringent regulatory requirements with regard to notification, monitoring, cost sharing, and response to contamination problems.

VI) SUMMARY AND CONCLUSION

The basis and intent of any groundwater protection provisions to be included as part of the FIFRA reauthorization should be the protection of public health and the prevention of pesticide contamination of current and potential sources of drinking water. It should provide regulatory agencies with the authority and mechanisms to effectively achieve these goals, and to ensure that costs associated with activities to mitigate and control contamination problems are equitably distributed between all entities involved. ASDWA believes that the groundwater provisions in the amendments offered by Senator Hawkins do not satisfactorily meet these criteria. Our primary concerns with the language embodied in these amendments are as follows.

- The use of MCLs as action levels would assure significant degredation of groundwater quality, and negate any preventive value of these provisions.

- The abilities of regulatory agencies to respond to contamination problems, and the type of responses allowed, are unnecessarily restrictive. The policy of the Federal government, as expressed through these provisions, should be one of conservatism with regard to public health protection. The burden should be on the registrant to prove that a regulatory action is inappropriate; rather than forcing the agency to undertake lengthy justification procedures before response actions can take effect.

- No provisions are made for the equitable distribution of costs associated with detection, confirmation, and follow-up monitoring procedures. These activities are central to the entire regulatory program envisioned for the FIFRA amendments and will likely result in significant economic burdens for public water systems, private well owners and regulatory agencies. An alternative mechanism to generate funds from registrants to offset monitoring costs must be incorporated.

- Flexibility and authority for state governments to initiate similar or more stringent groundwater protection programs should be explicitly provided for.

The Association of State Drinking Water Administrators greatly appreciates the opportunity to provide this testimony to the Subcommittee. We again commend the Members for their recognition of the human health threats potentially involved with pesticide contamination of underground sources of drinking water. The Association will be pleased to continue to work with the Subcommittee and the Congress in drafting alternative groundwater

protection language for the FIFRA reathorization so that the overall intent of the provisions can be realized -- increased protection of public health through the avoidance of pesticide contamination of drinking water.